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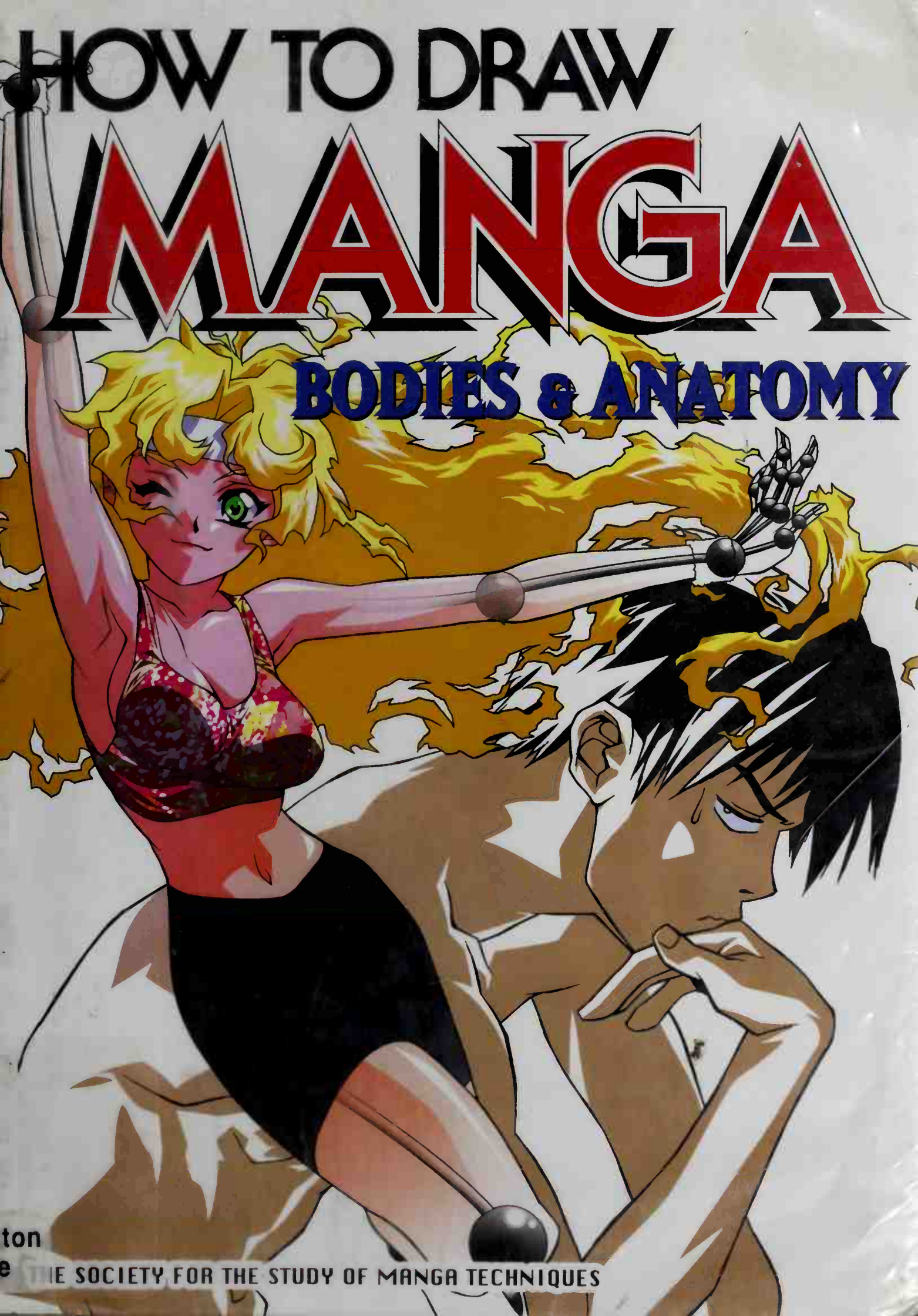

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by the Society for the Study of Manga Techniques

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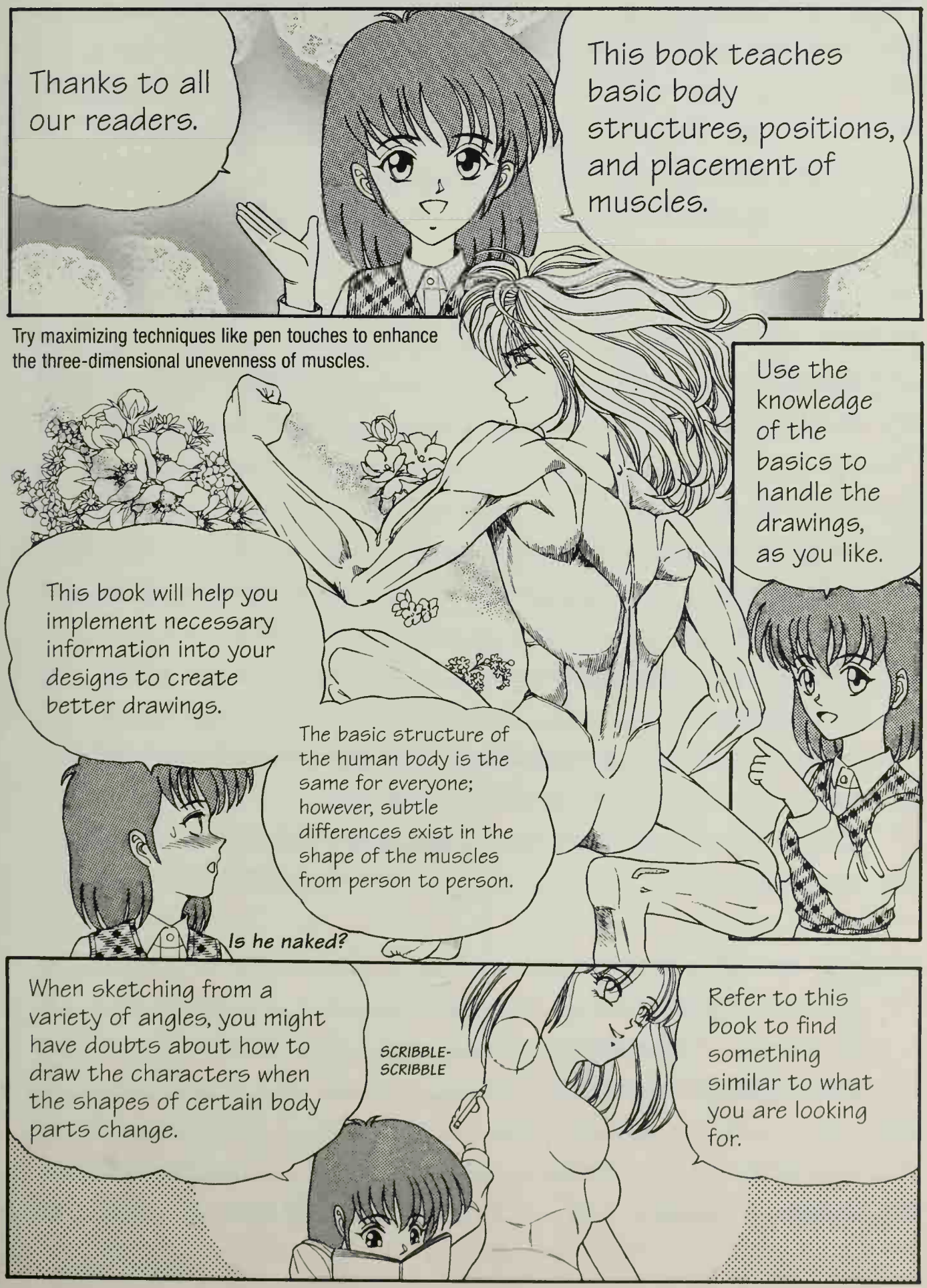
The Aim of this Book



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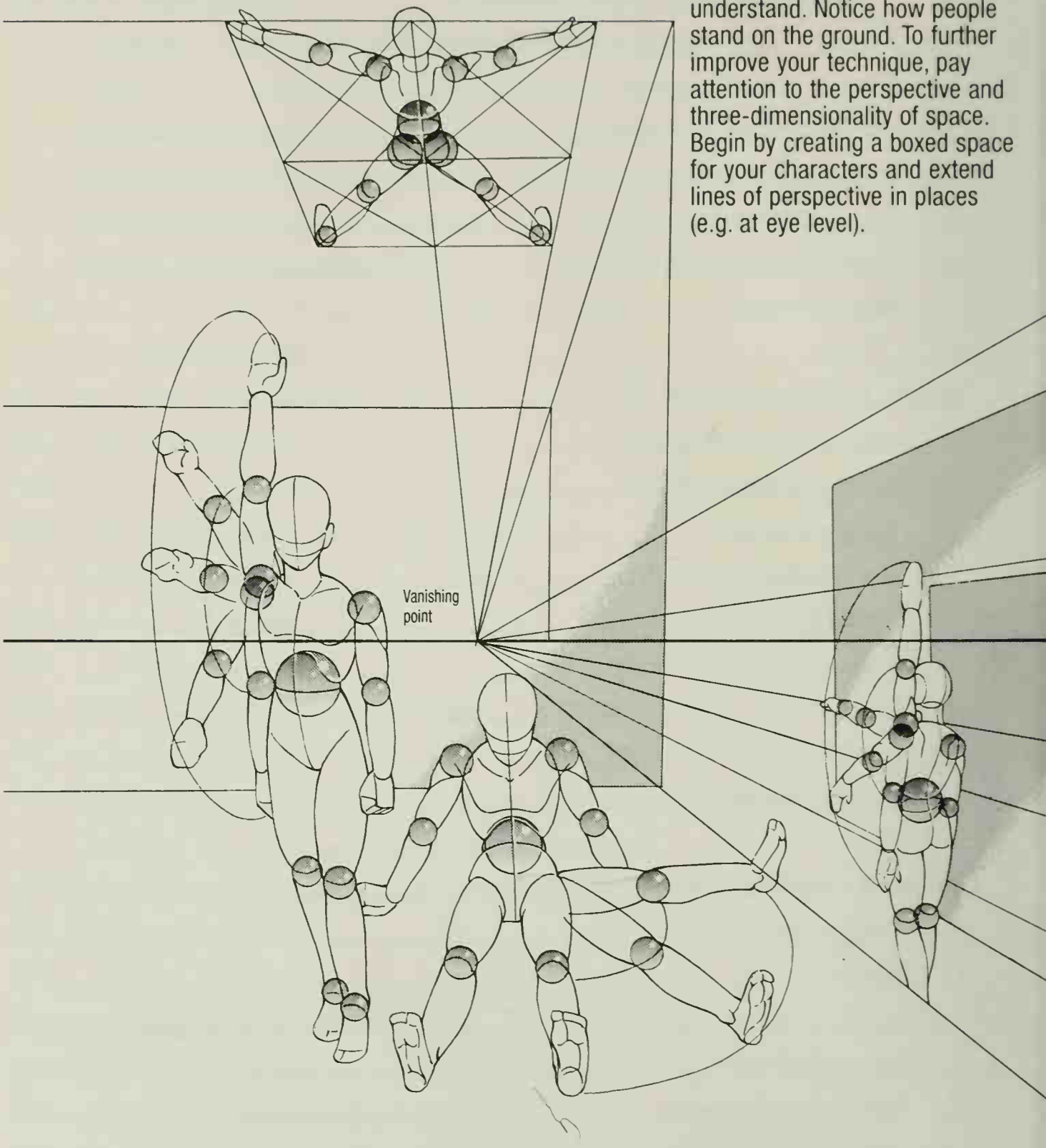
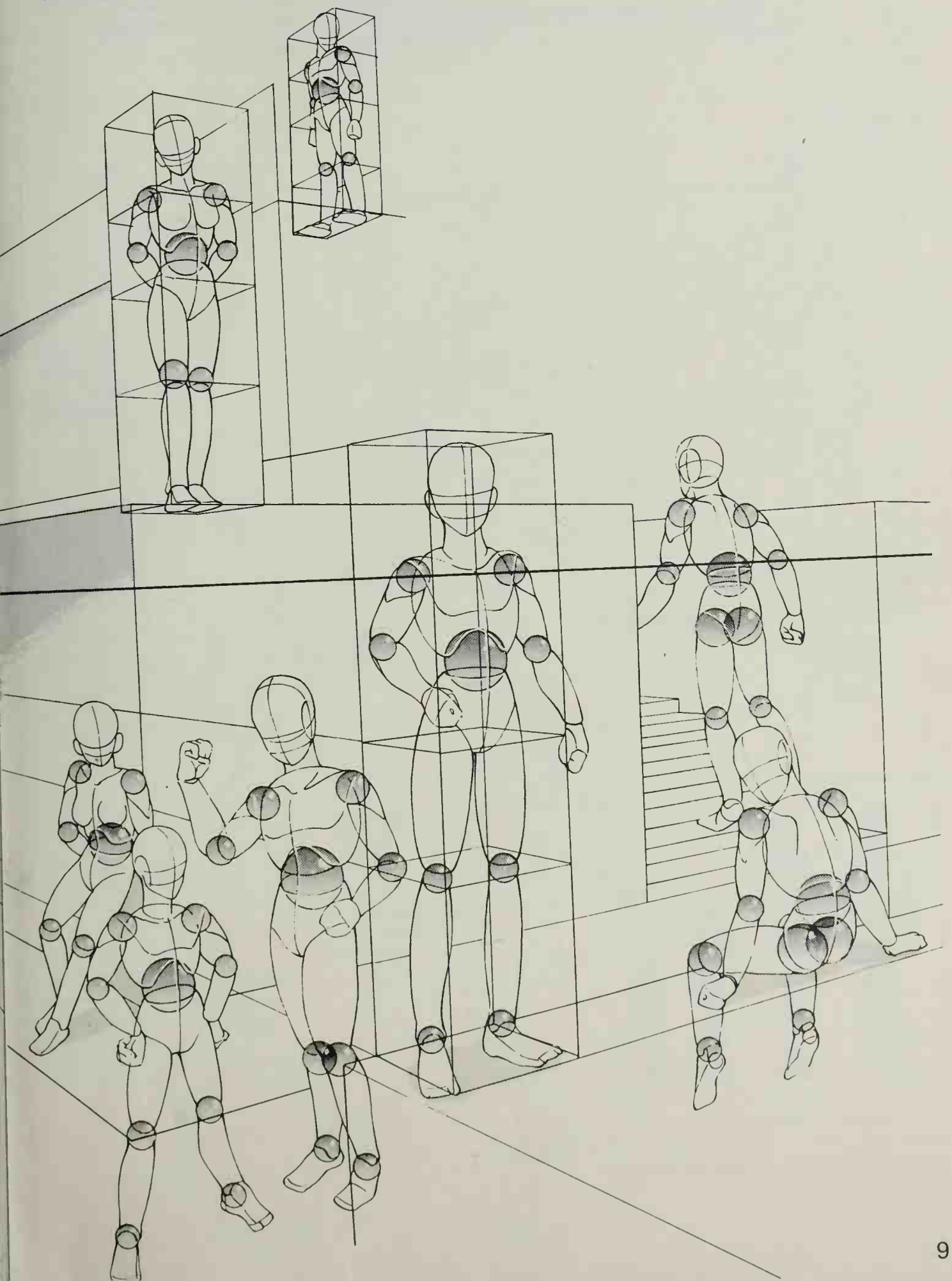
Perspective - Improving Your Technique

Using blocks and circular joints makes expressing the make-up and three-dimensionality of the human body easier to understand. Notice how people stand on the ground. To further improve your technique, pay attention to the perspective and three-dimensionality of space. Begin by creating a boxed space for your characters and extend lines of perspective in places (e.g. at eye level).

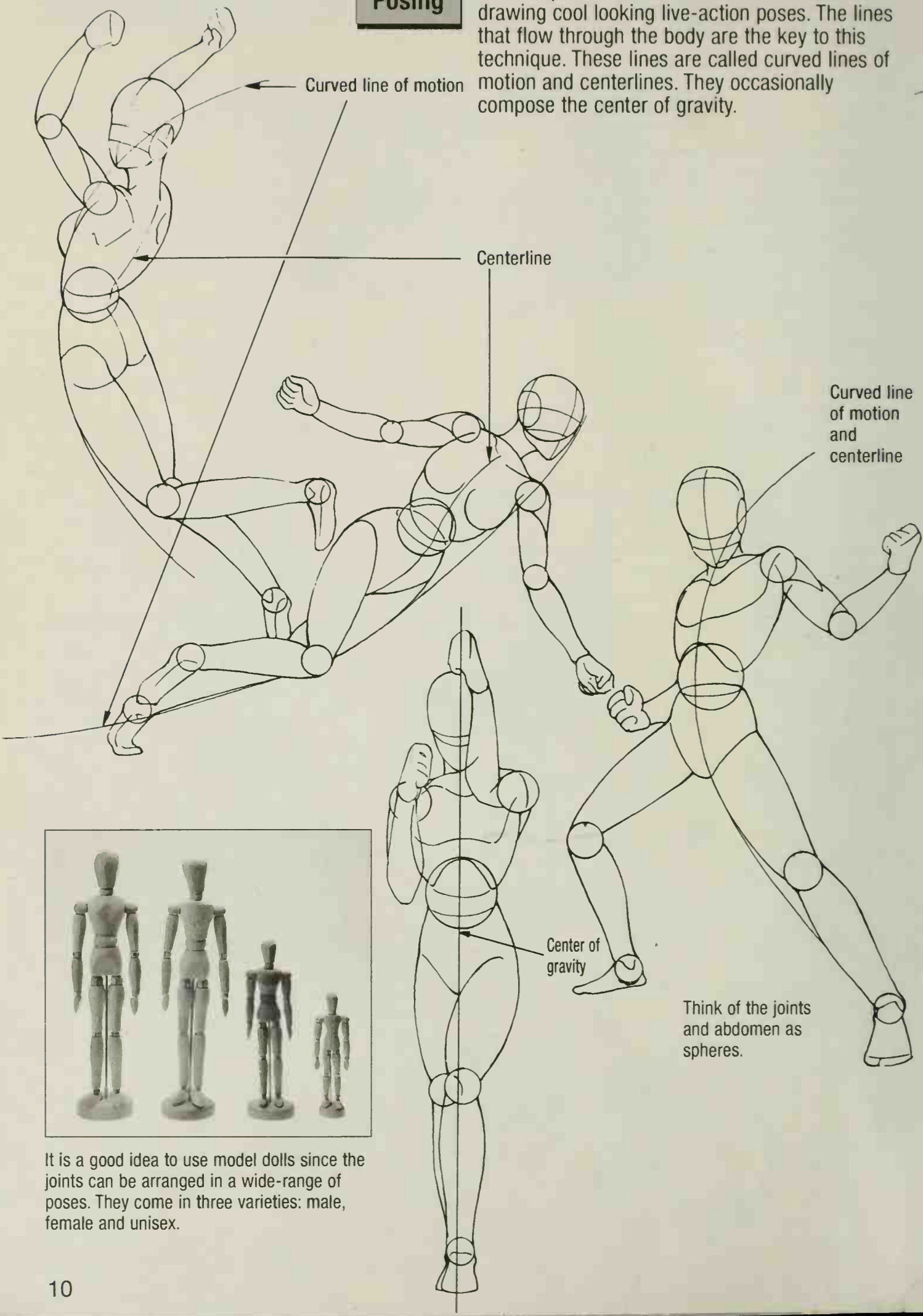


Draw boxes around the figure and build lines of perspective from there.



Posing

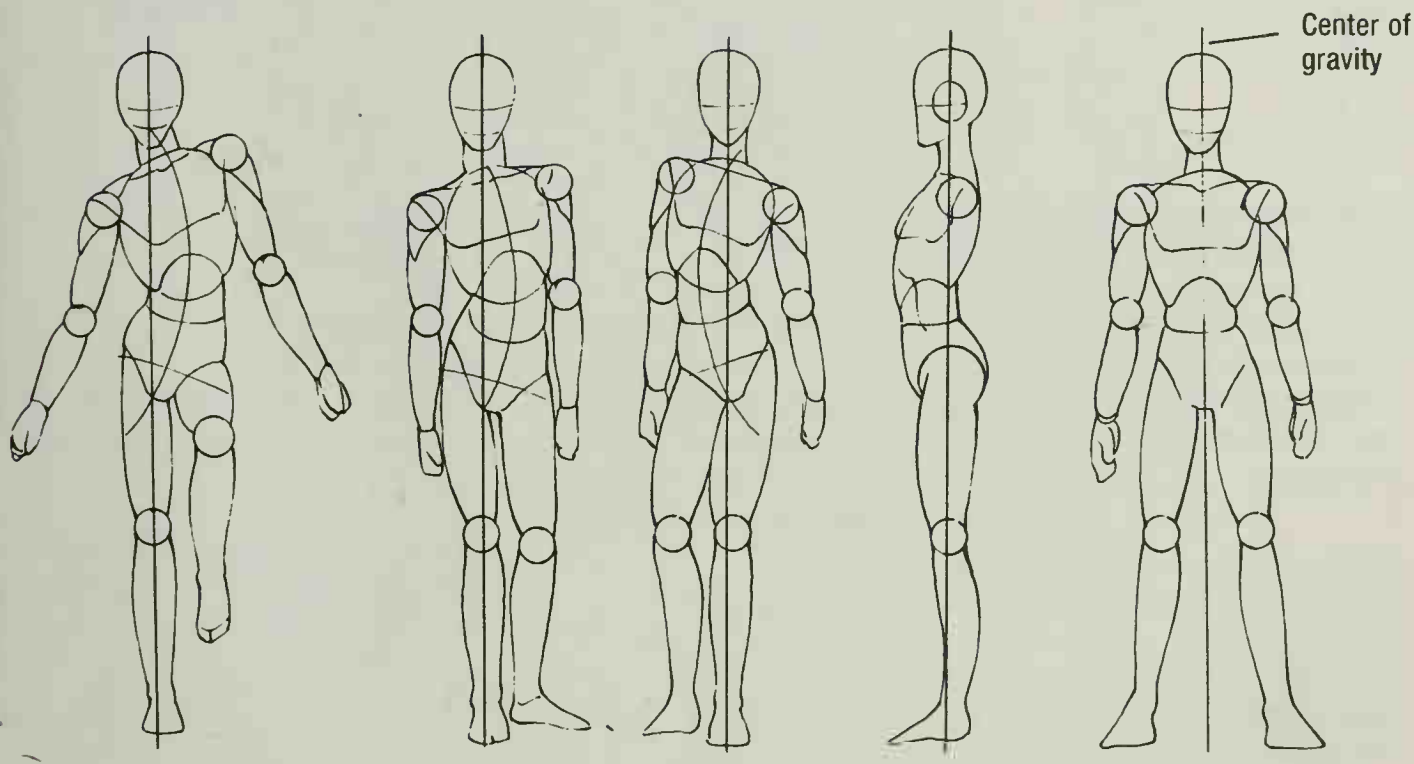
A developed sense of characters is a must for drawing cool looking live-action poses. The lines that flow through the body are the key to this technique. These lines are called curved lines of motion and centerlines. They occasionally compose the center of gravity.



It is a good idea to use model dolls since the joints can be arranged in a wide-range of poses. They come in three varieties: male, female and unisex.

What is Center of Gravity?

This term describes the center point from which weight is displaced on the body. When drawing manga, it is difficult to keep the center of gravity in mind for each character, so it's a good idea to learn the concept. This technique can be handy in bringing out the sensation of weight to make natural body positions look even cooler.



Weight on one leg

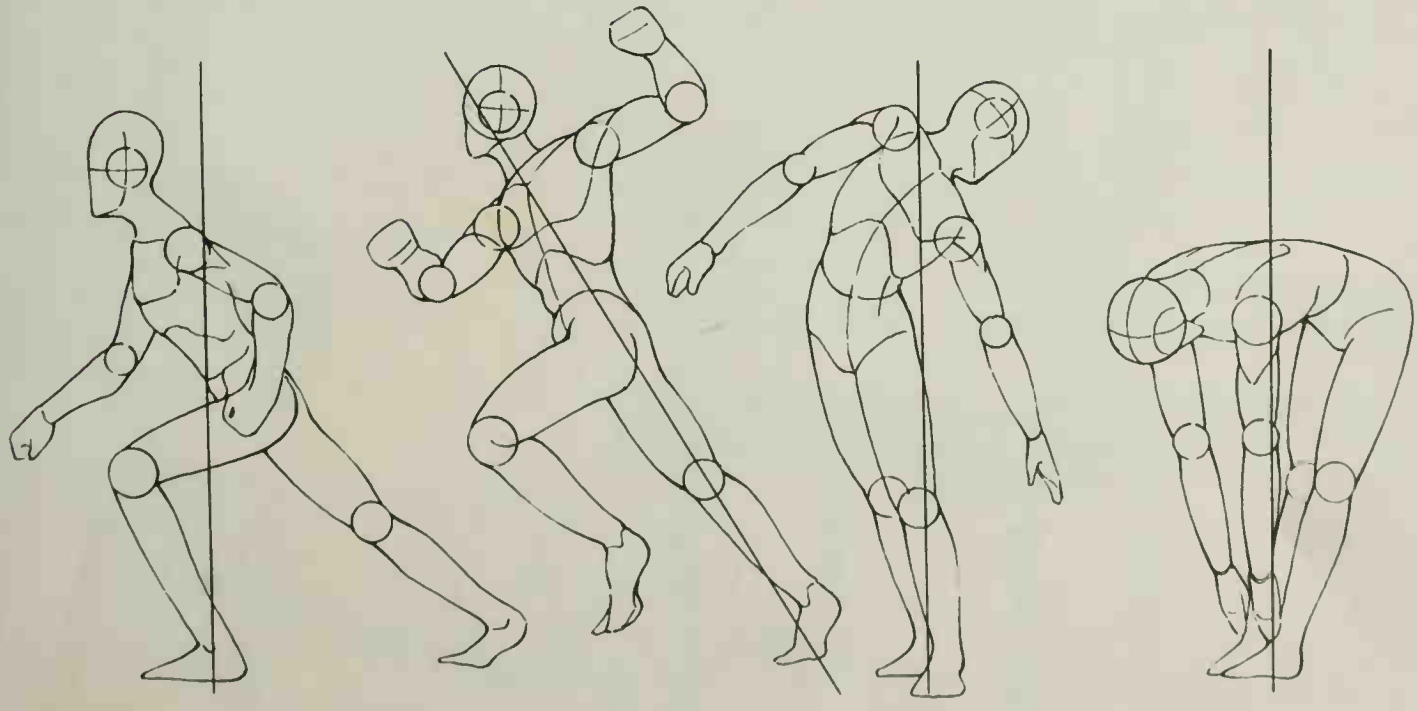
The center of gravity is somewhere in the middle of the body when the character is standing still.

Weight on the right leg

Weight on the left leg

Side view

Weight on both legs

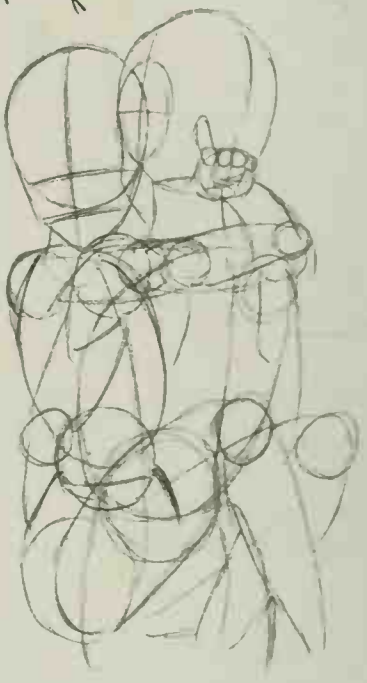


The center of gravity also leans towards the direction of the motion.

Drawing Entwined Characters

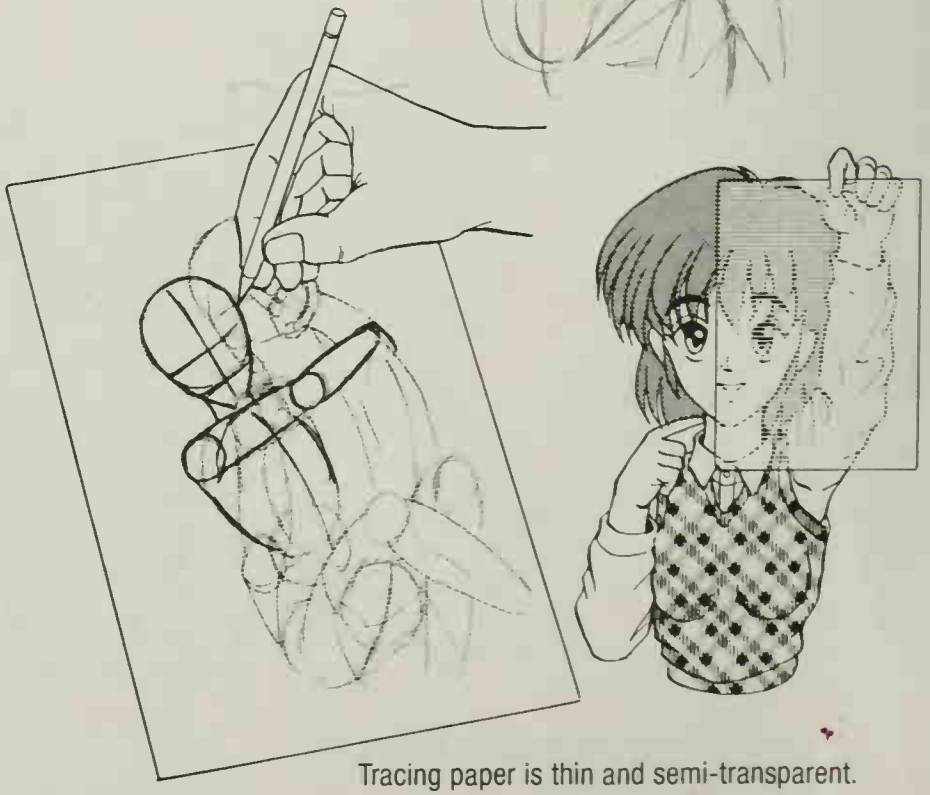
Drawing characters one by one is a breeze, but when your characters are intertwined in battle or love scenes, you may have difficulties. Have no fear. There's a method to this madness.

Begin with a basic design. At this stage, what often happens is that due to too many lines being drawn, the important lines become difficult to distinguish, or balancing the physique of one of the characters becomes almost impossible.



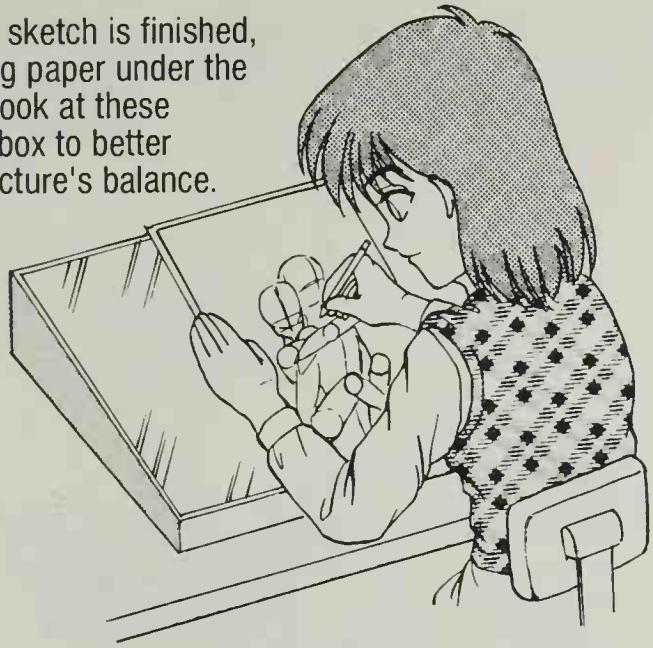
You could use an eraser to thin out these unnecessary lines; however, a better method is to use a blue leaded pencil to shape your characters and then use a black leaded pencil to outline a rough sketch.

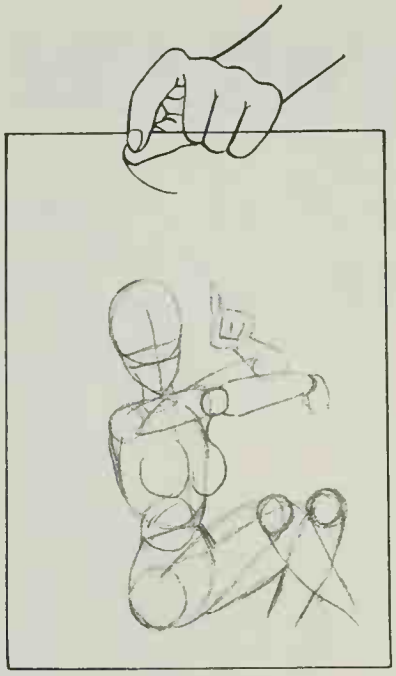
Once the rough sketch is done, lay some tracing paper on top of it.
Then, separate one of the unbalanced characters onto the tracing paper to better balance the picture.



Tracing paper is thin and semi-transparent.

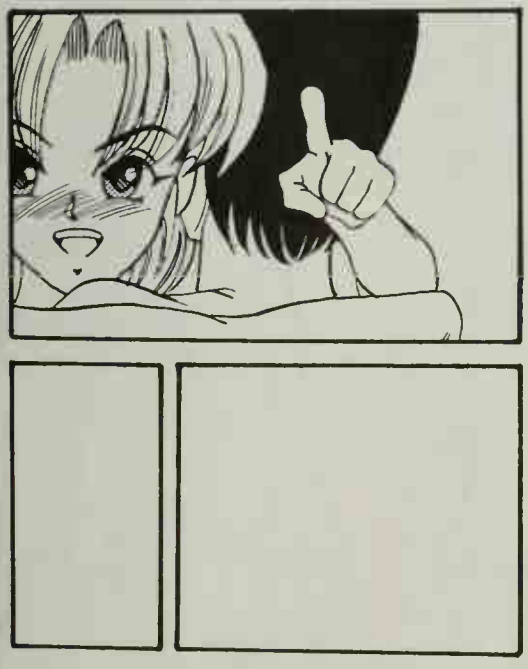
Once the rough sketch is finished, place the tracing paper under the drawing. Now, look at these through a light box to better compose the picture's balance.



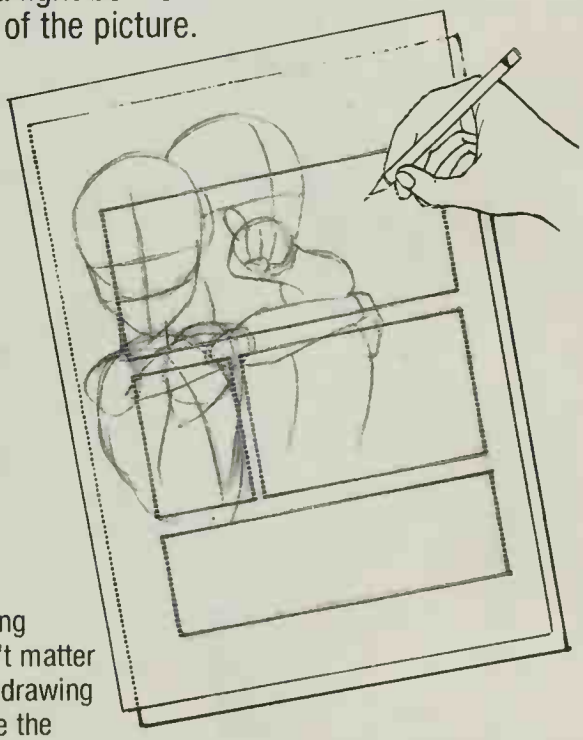


Shifting the tracing paper sometimes helps adjust the composition.

Also, when a part of the shot is being used as a close-up, it is quite difficult to maintain the picture's balance.

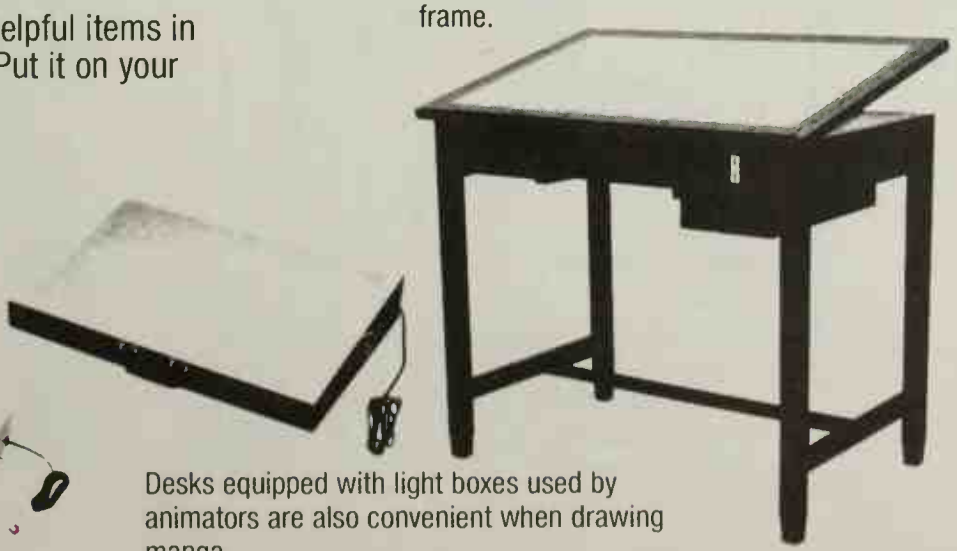


In such cases, after giving shape to all of the drawing on the tracing paper, use a light box to stabilize the layout of the picture.



If you use tracing paper, it doesn't matter how much the drawing extends outside the frame.

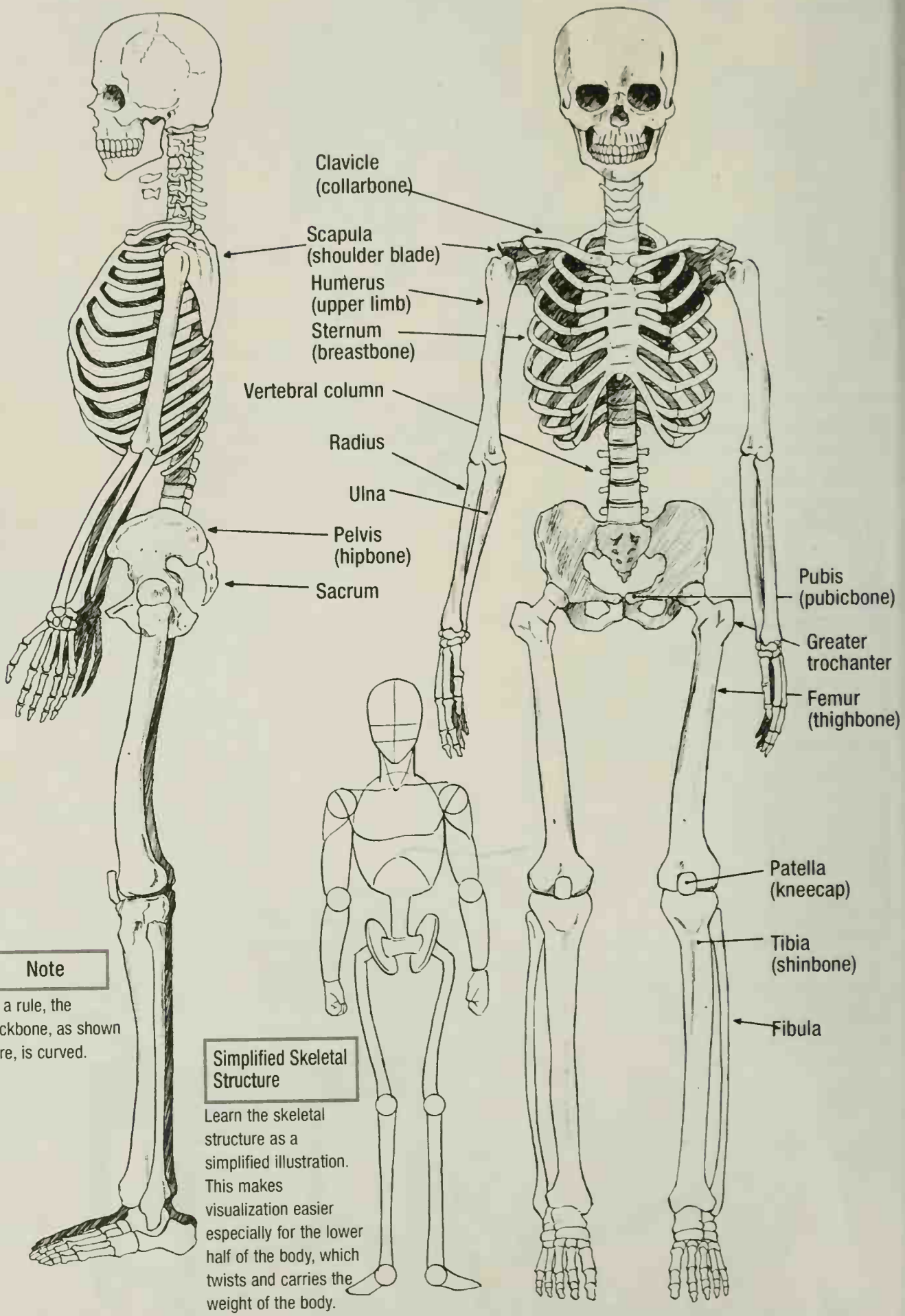
Light boxes are helpful items in drawing manga. Put it on your studio wish list.



Desks equipped with light boxes used by animators are also convenient when drawing manga.

The Human Skeleton

Knowing a few things about the skeleton is helpful in order to better draw the human body. Common terms are given in parenthesis.

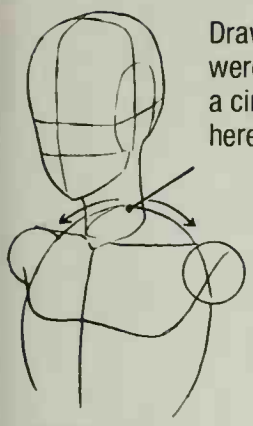


Note

As a rule, the backbone, as shown here, is curved.

Simplified Skeletal Structure

Learn the skeletal structure as a simplified illustration. This makes visualization easier especially for the lower half of the body, which twists and carries the weight of the body.



Draw as if you were hanging a circle from here.

Note

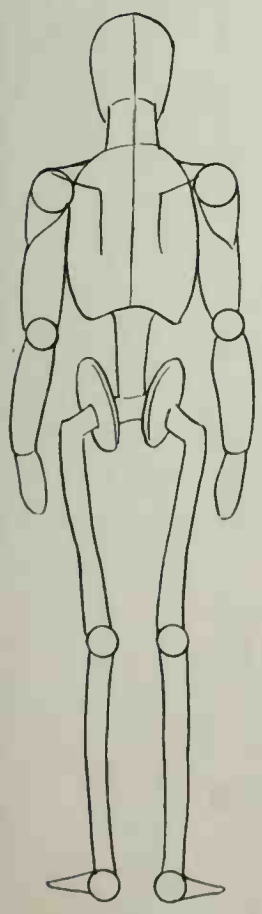
Be aware of the seventh cervical vertebrae when giving shape to the sternum. Then, draw as if you were hanging a circle from there.

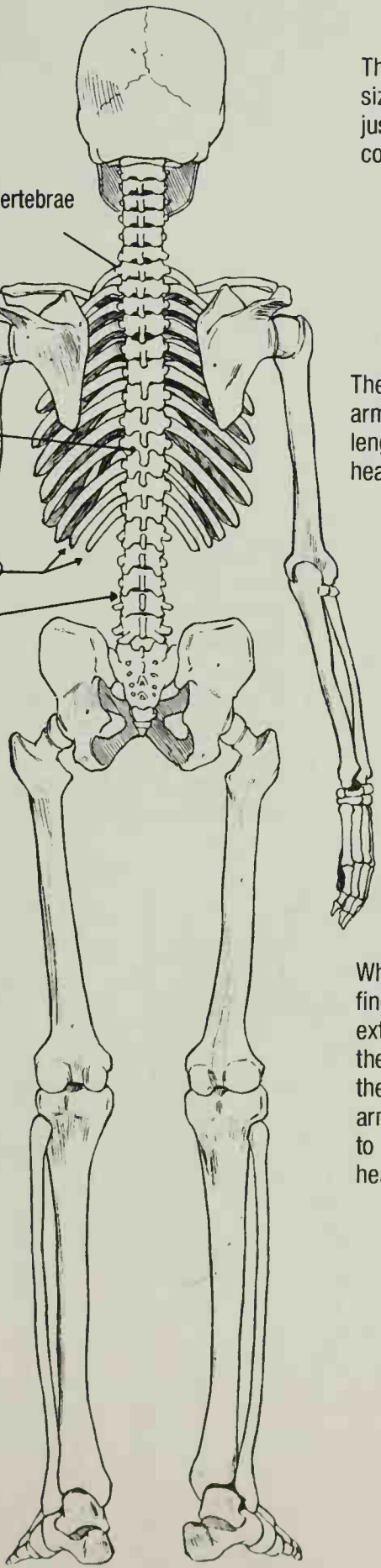
Cervical vertebrae (Seventh)

Thoracic vertebrae (Twelve)

Floating ribs

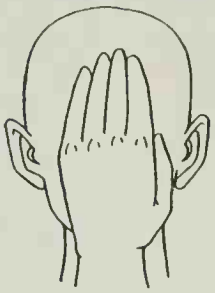
Lumbar vertebrae (Five)

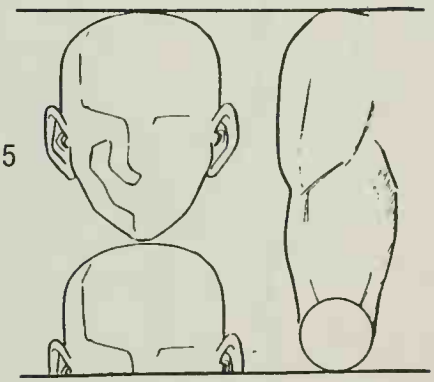




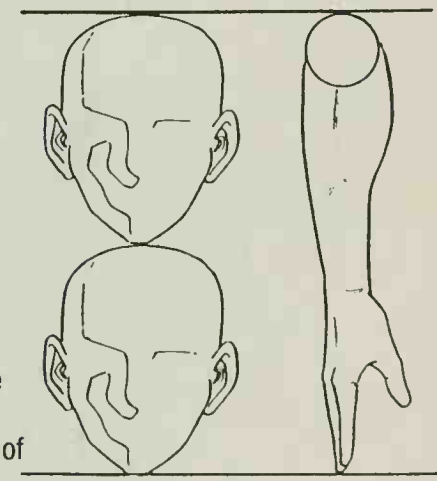
Standard Yardstick For Arms and Legs

The standard size of a hand just about covers the face.



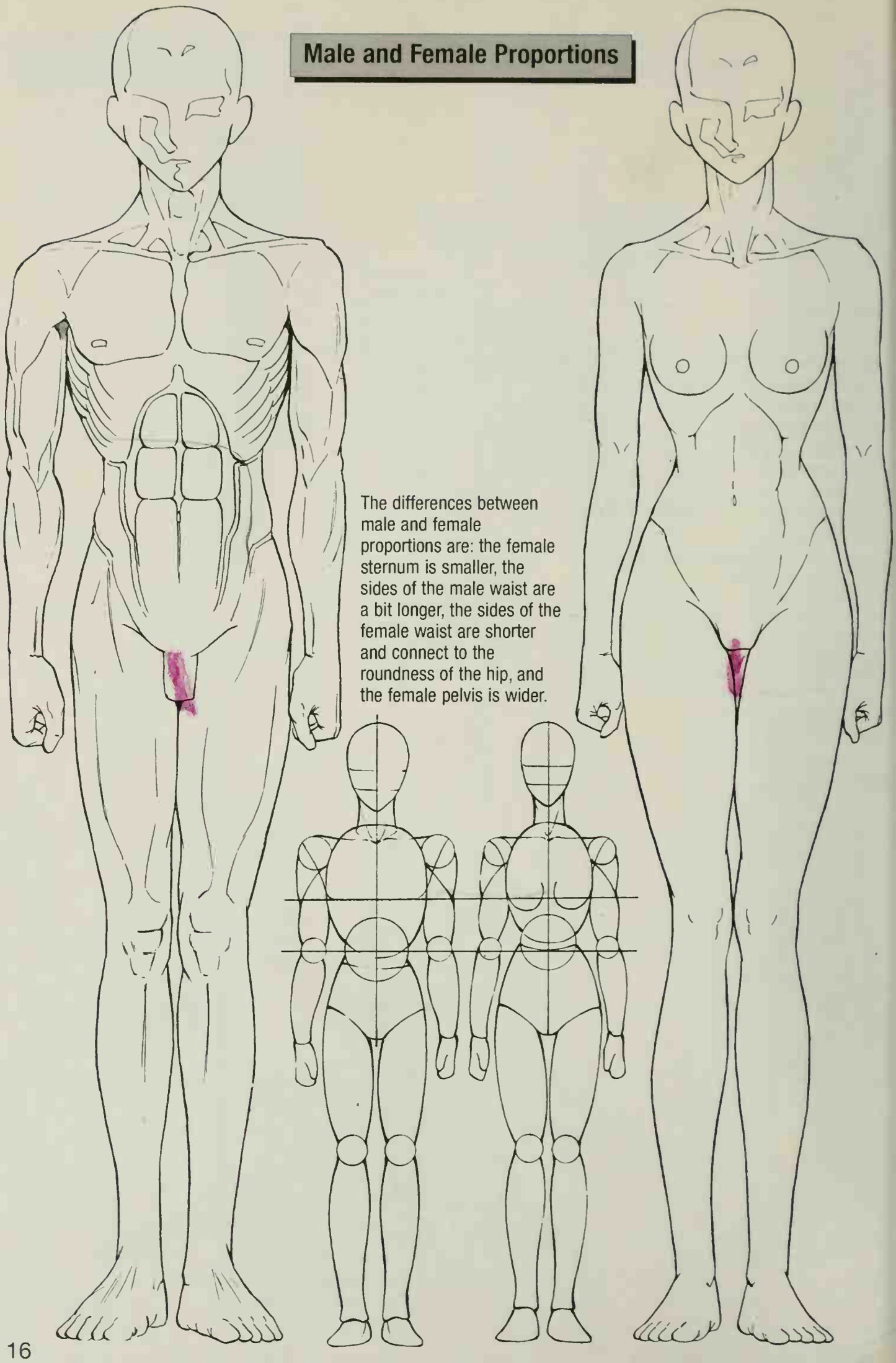


The upper arm is the length of 1.5 heads.

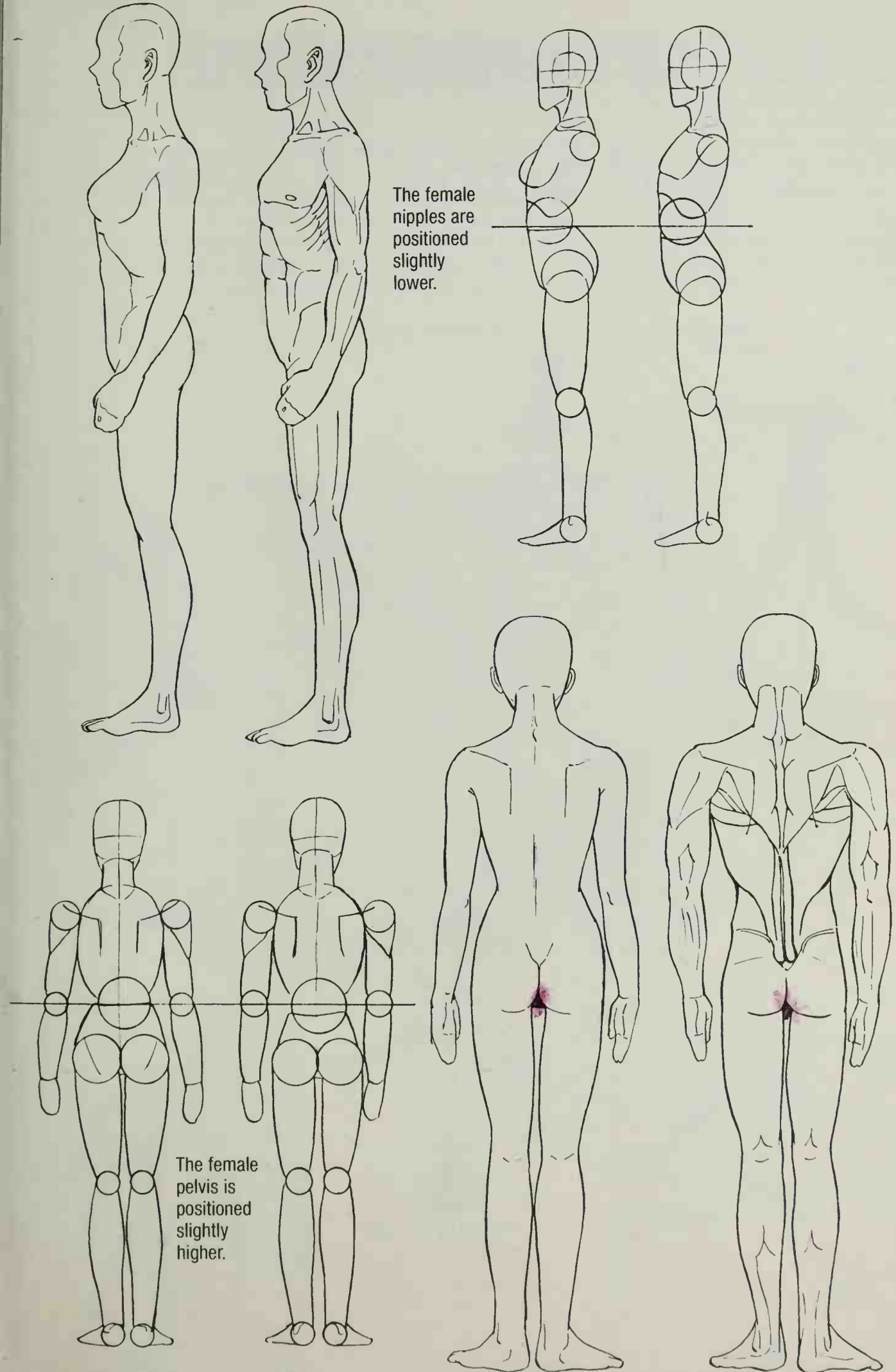


When the fingers are extended, the length of the lower arm is equal to two heads.

Male and Female Proportions



The differences between male and female proportions are: the female sternum is smaller, the sides of the male waist are a bit longer, the sides of the female waist are shorter and connect to the roundness of the hip, and the female pelvis is wider.


The female nipples are positioned slightly lower.
The female pelvis is positioned slightly higher.

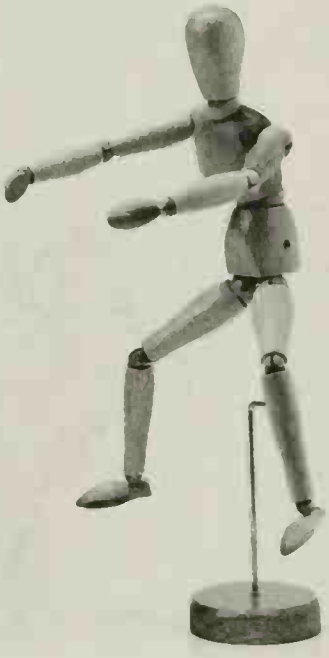
There are three kinds of model dolls: male, female and unisex.

This is the definitive reference book for drawing human figures for manga, illustrations, and anime, which can be used, at many levels. I am sure that many of you make use of photographs to practice your techniques, which is great. However, photographs do not give an accurate picture of how muscles are formed on the body.

In these situations, this book will manifest a great deal of power in your drawings. Making use of model dolls is another great way to improve your skills. If you already have a perfect picture of what the human body looks like in your mind, then you may not need to use models. However, for those of you who are thinking about studying with models, I applaud your efforts. Go ahead and give them a try. Just simply moving them around in a playful manner will improve your skills.

Model Doll (Female)

Model Doll (Male)

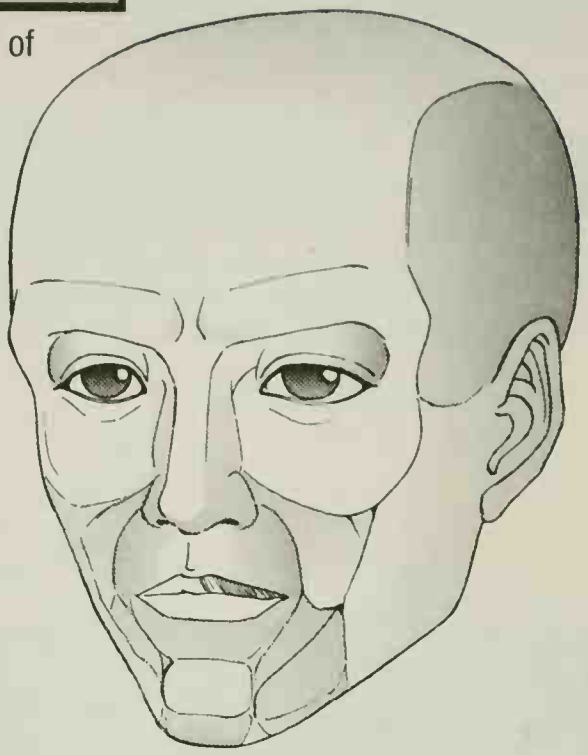


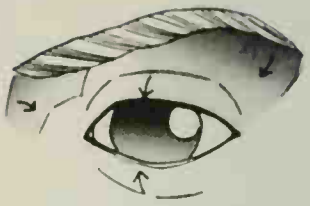
Model Doll (Unisex)

Chapter 1
Head Variations

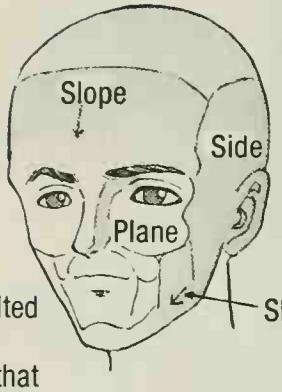
Facial Three-dimensionality

Consider the basic unevenness of the face. Refer to these when drawing manga characters or adding in shadows.

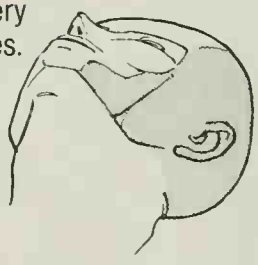


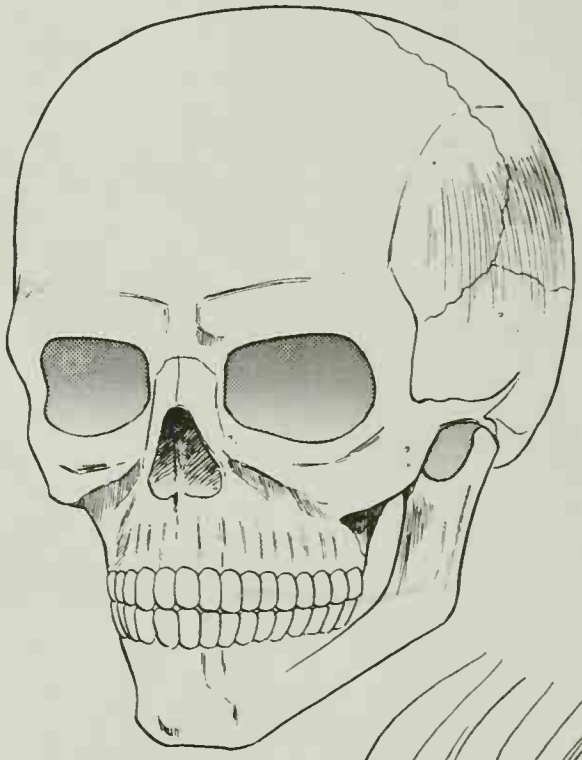


The eyelids rise around the spherical shape of the eyeball.



The face tilted upward illustrates that the face has very few flat features.





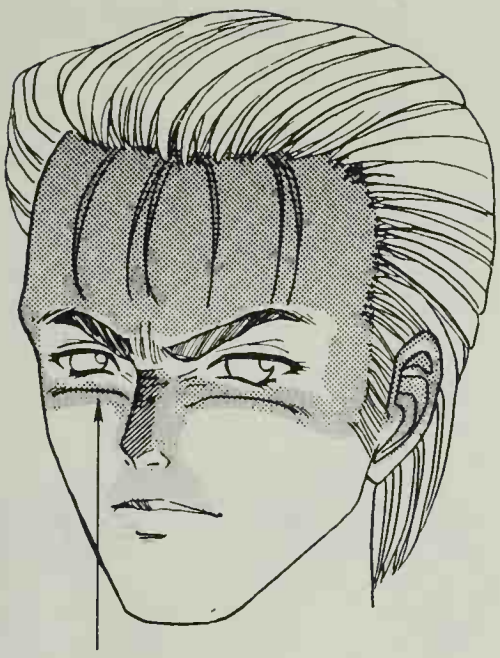
Consider the flow of the skeletal structure from between the eyes down to the nose.

The shadow mixes with that of the nose.

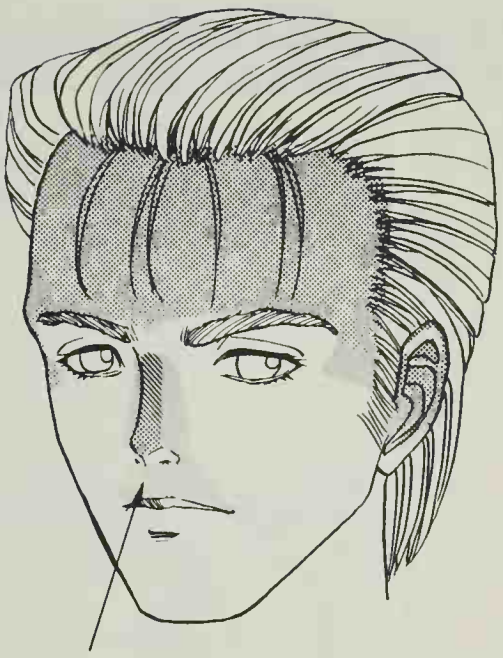
Consider the shadow produced from the nose.

When incorporating shadows.

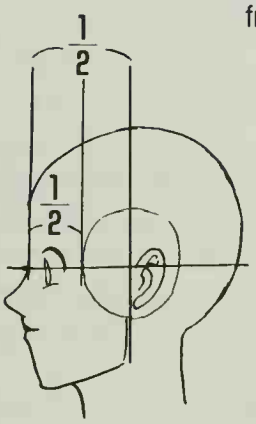
Consider the shape of the chin.



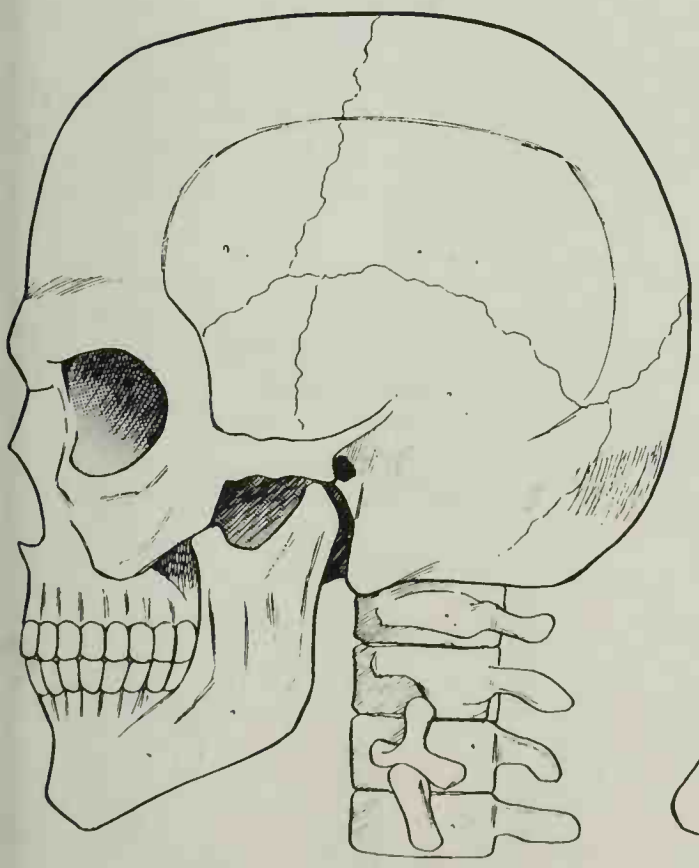
As cheekbones rise when the character laughs or gets angry, this will create shadows when lit from below. The same is true for characters with high cheekbones.



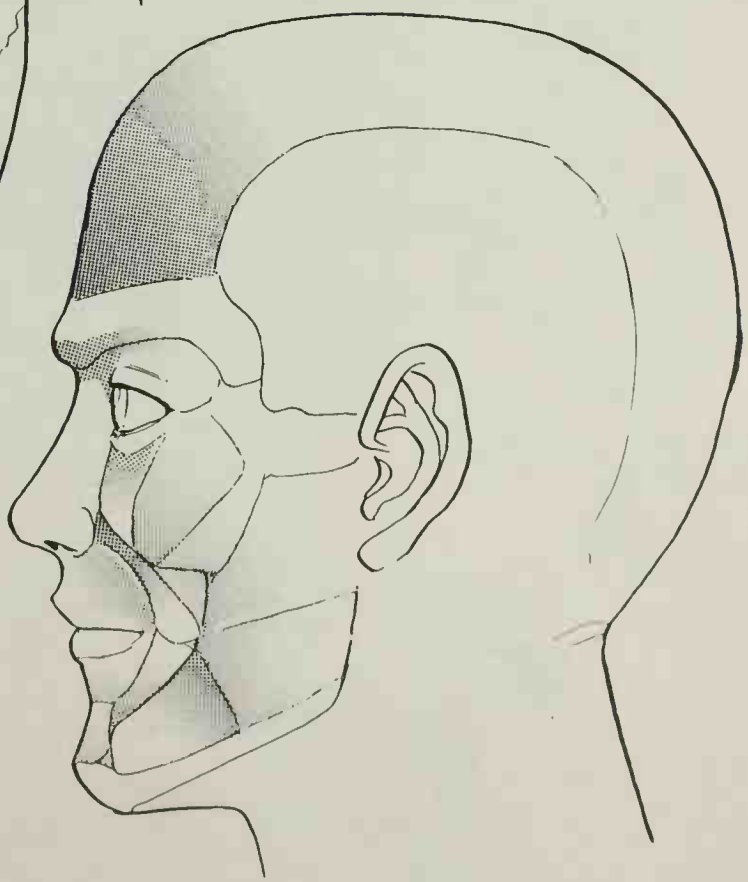
Definite shadows appear above the mouth when lit from below.



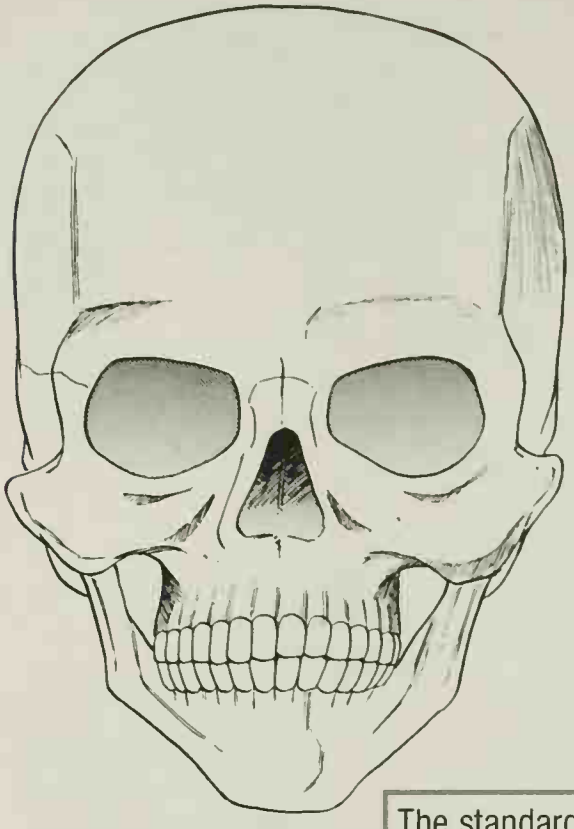
Position of the eyes and nose as seen from the side.

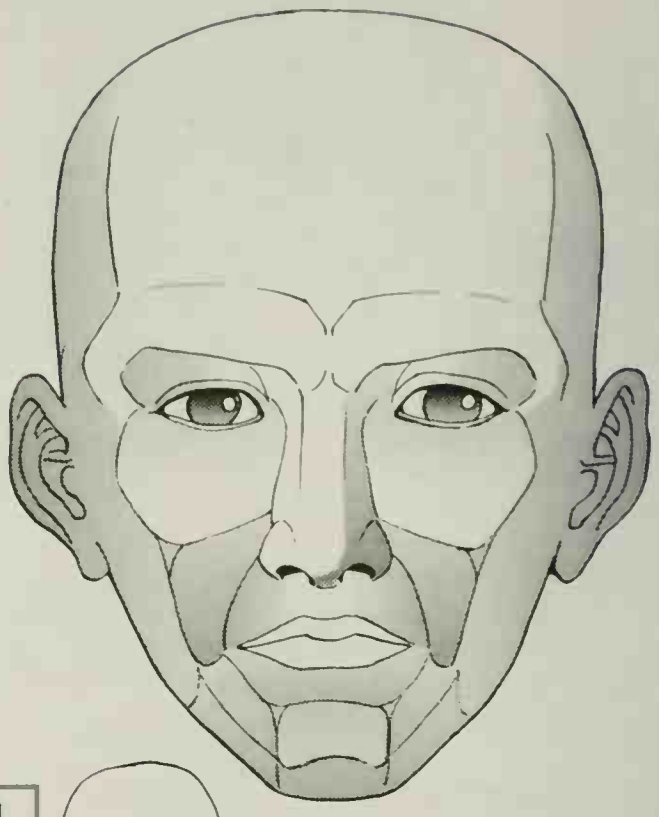


The human head consists of two parts: the face including the forehead and the jaw.

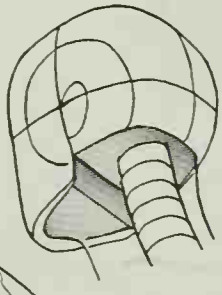


Facial Three-dimensionality - Part 2

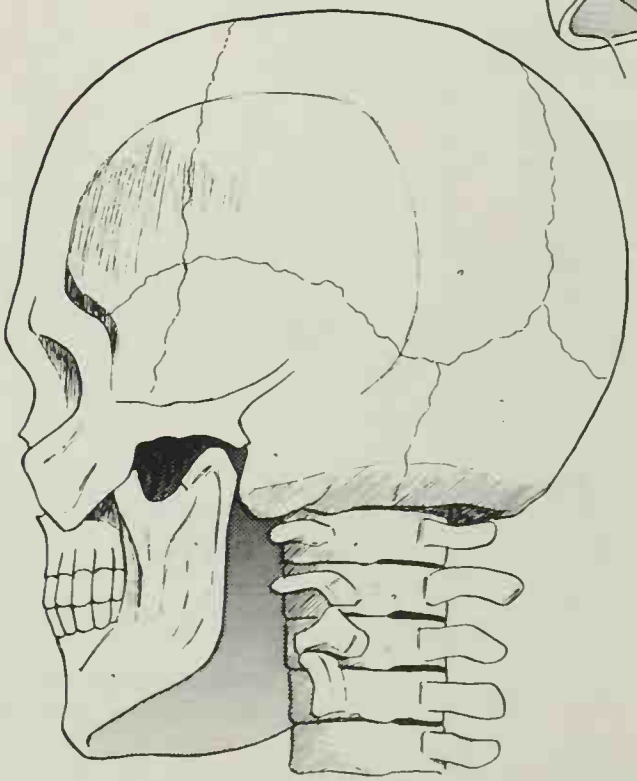


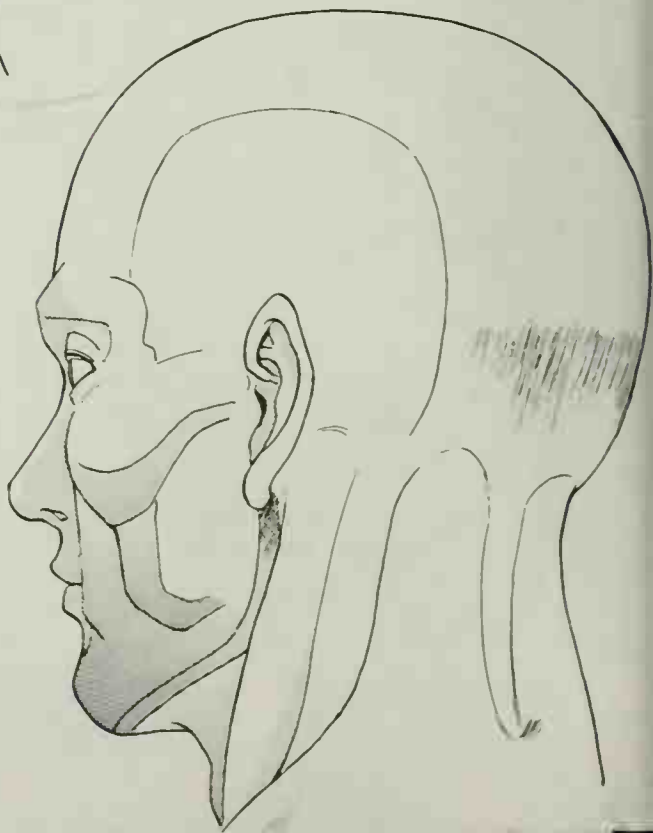


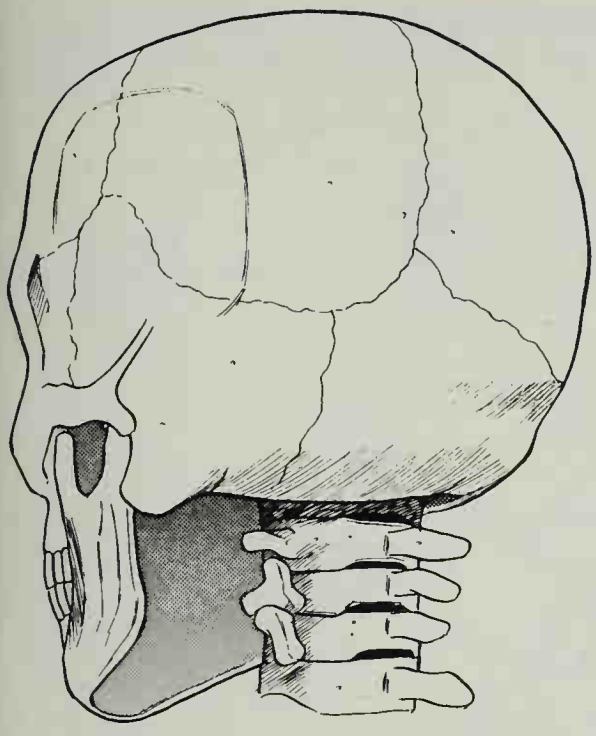
The standard method for drawing the space between the eyes is to leave enough room for one more eye to be drawn.

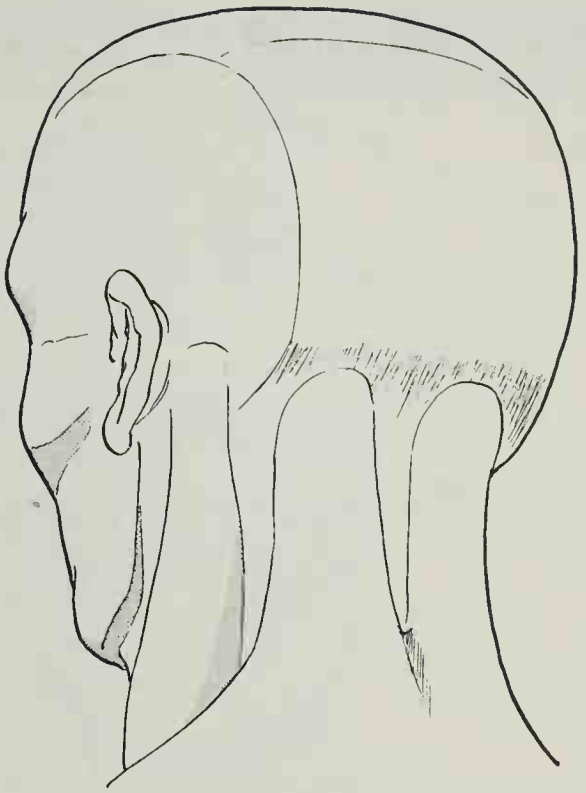


Connection of the cervical vertebrae and the skull.



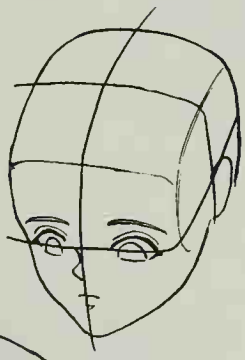




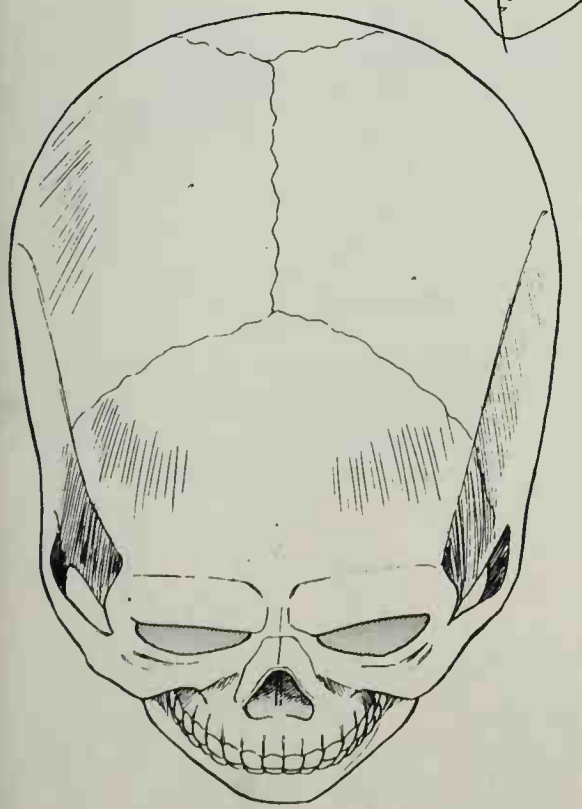


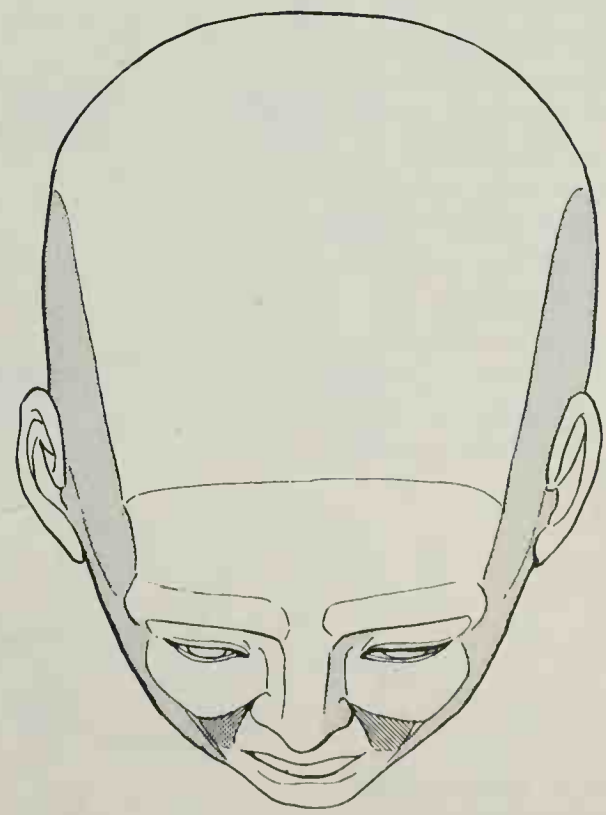
Centerline

A line extended from the position of the ears should intersect with the centerline at the summit of the head.



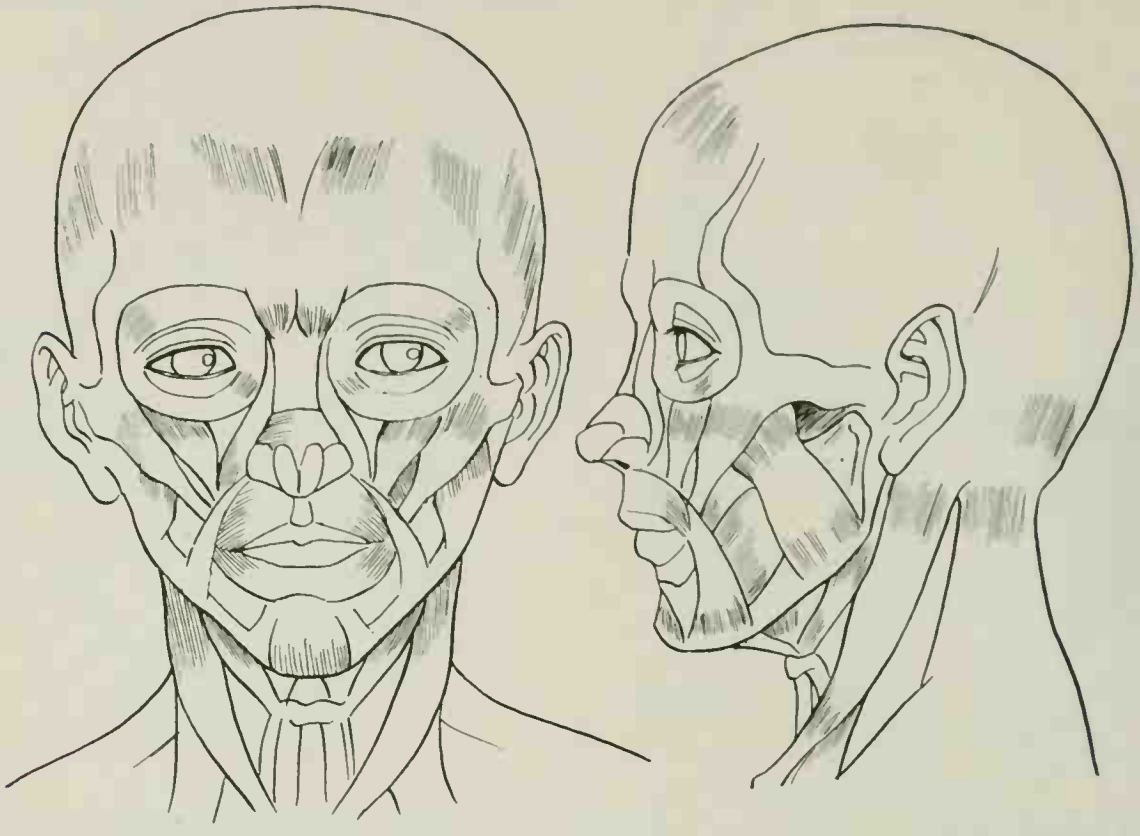
The head resembles a box when viewed from above.





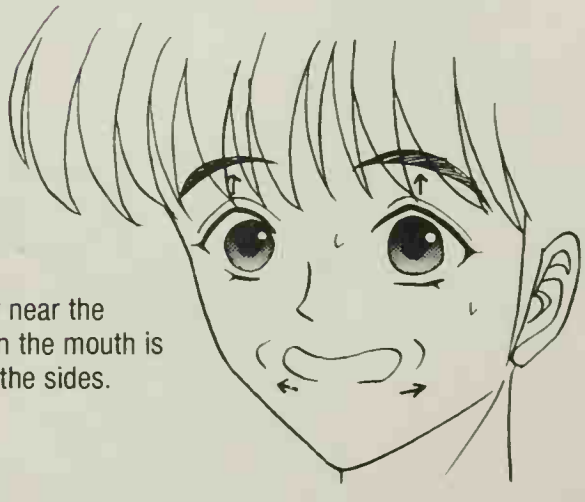
Facial Expressions

Facial expressions are a result of facial muscle movement. From muscular movements, the skin expands and contracts creating wrinkles.



From eyebrow movements, the eyelids are stretched creating expressions around the eyes.

While facial wrinkles are not often drawn in manga, they can be used between the eyebrows to express anger by bringing out a sense of force in drawings.

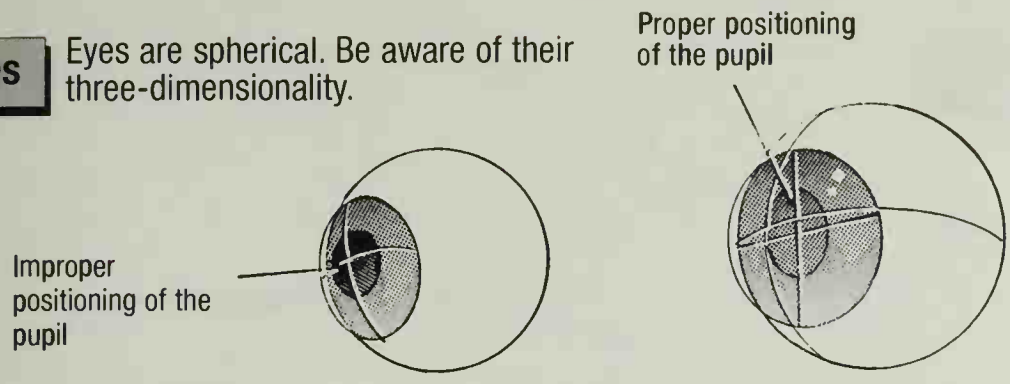


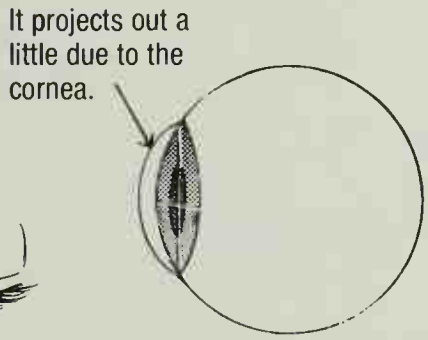
Wrinkles appear near the cheekbone when the mouth is opened wide to the sides.

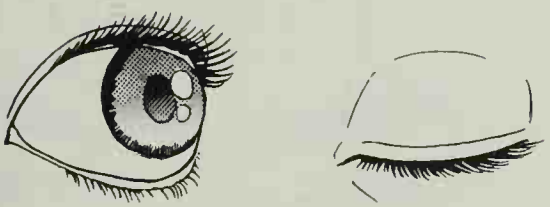
The muscles are relaxed when the character laughs.

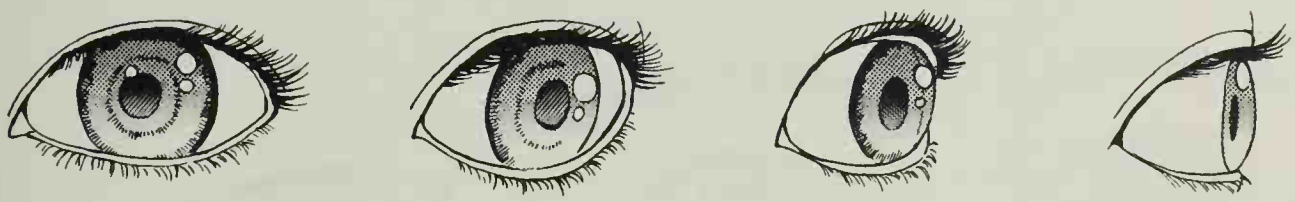
Eyes

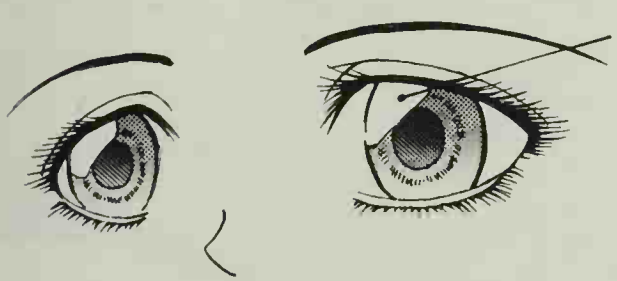
Eyes are spherical. Be aware of their three-dimensionality.



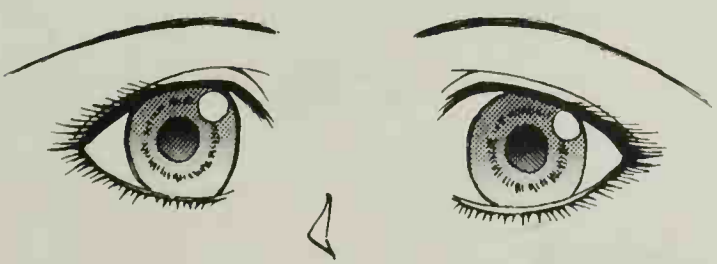




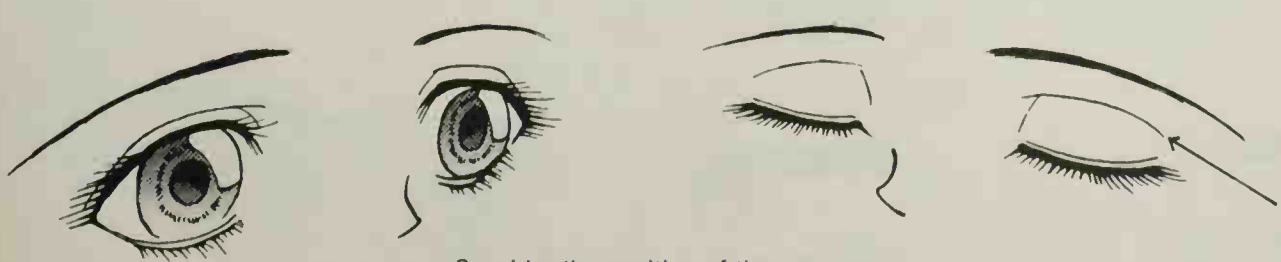




The shape of the eyes changes depending on the angle they are viewed. Keeping this in mind when drawing your characters might be fun, but it could cause lots of headaches. It takes a highly developed drawing sense to pull this off and could cause characters to literally fall apart. Thus, the easiest method is to position the eyeball well and use reflecting light instead of changing the shape when bringing out three-dimensionality.

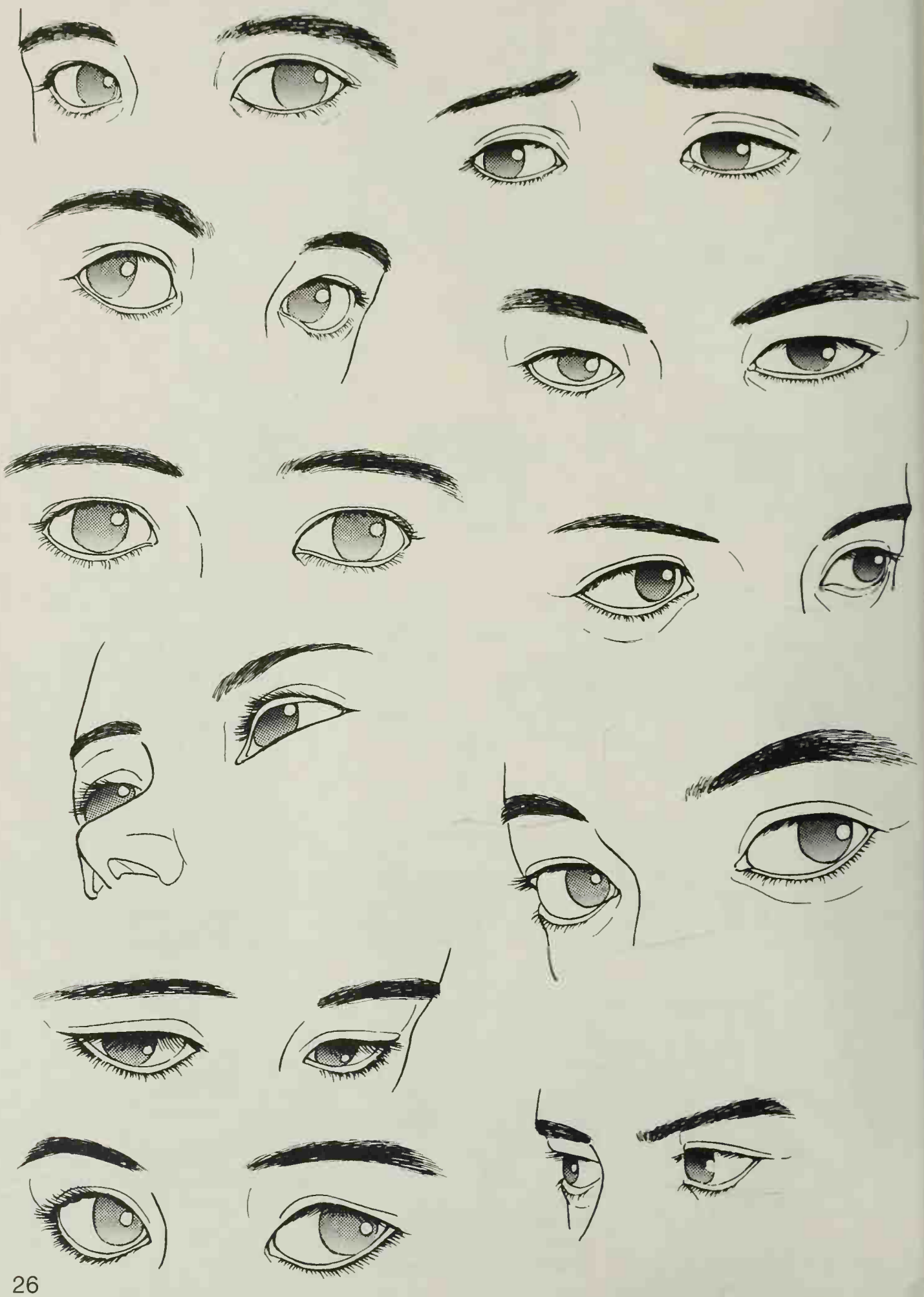


Frontal View

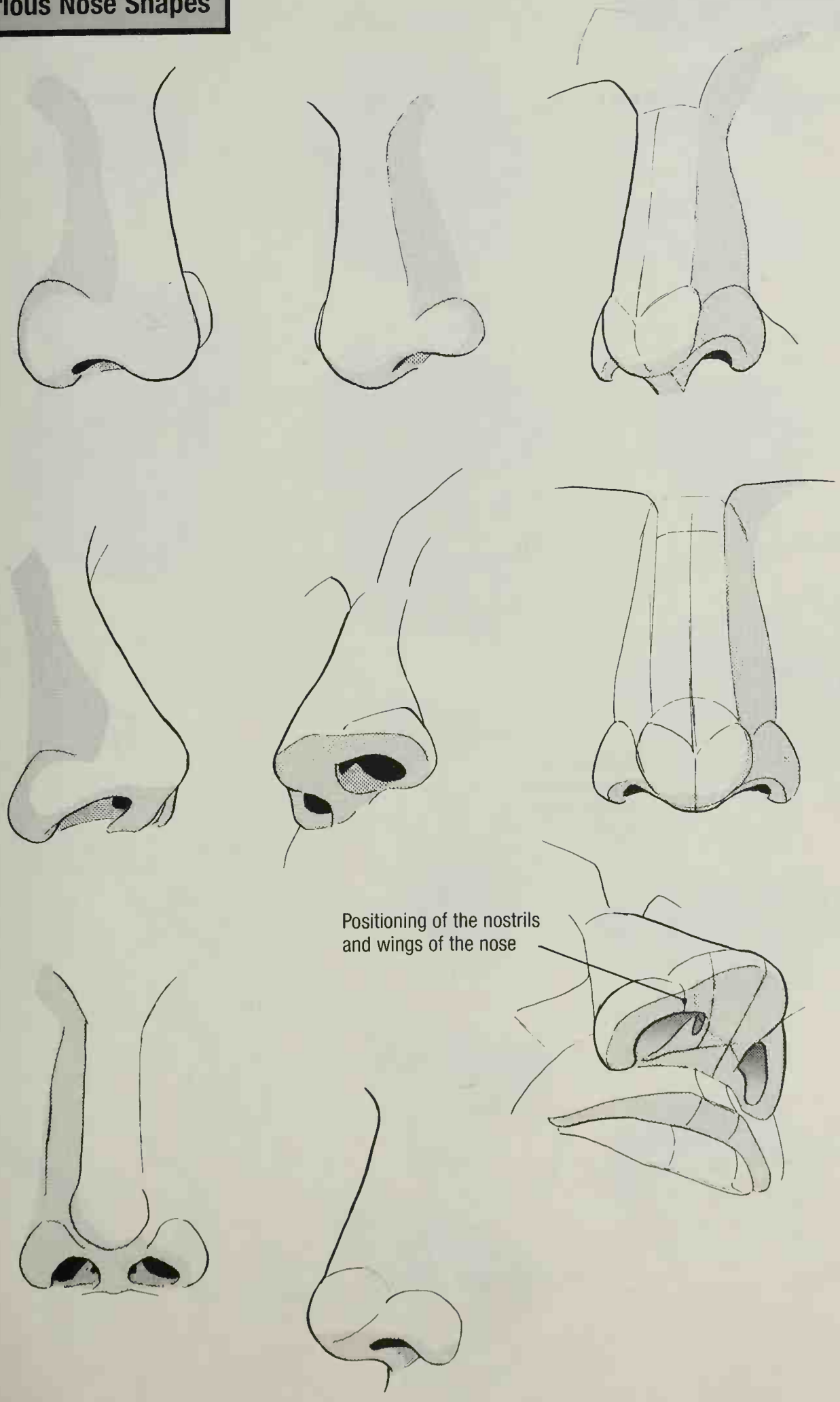


Consider the position of the pupil to bring out the three-dimensionality of the cornea.

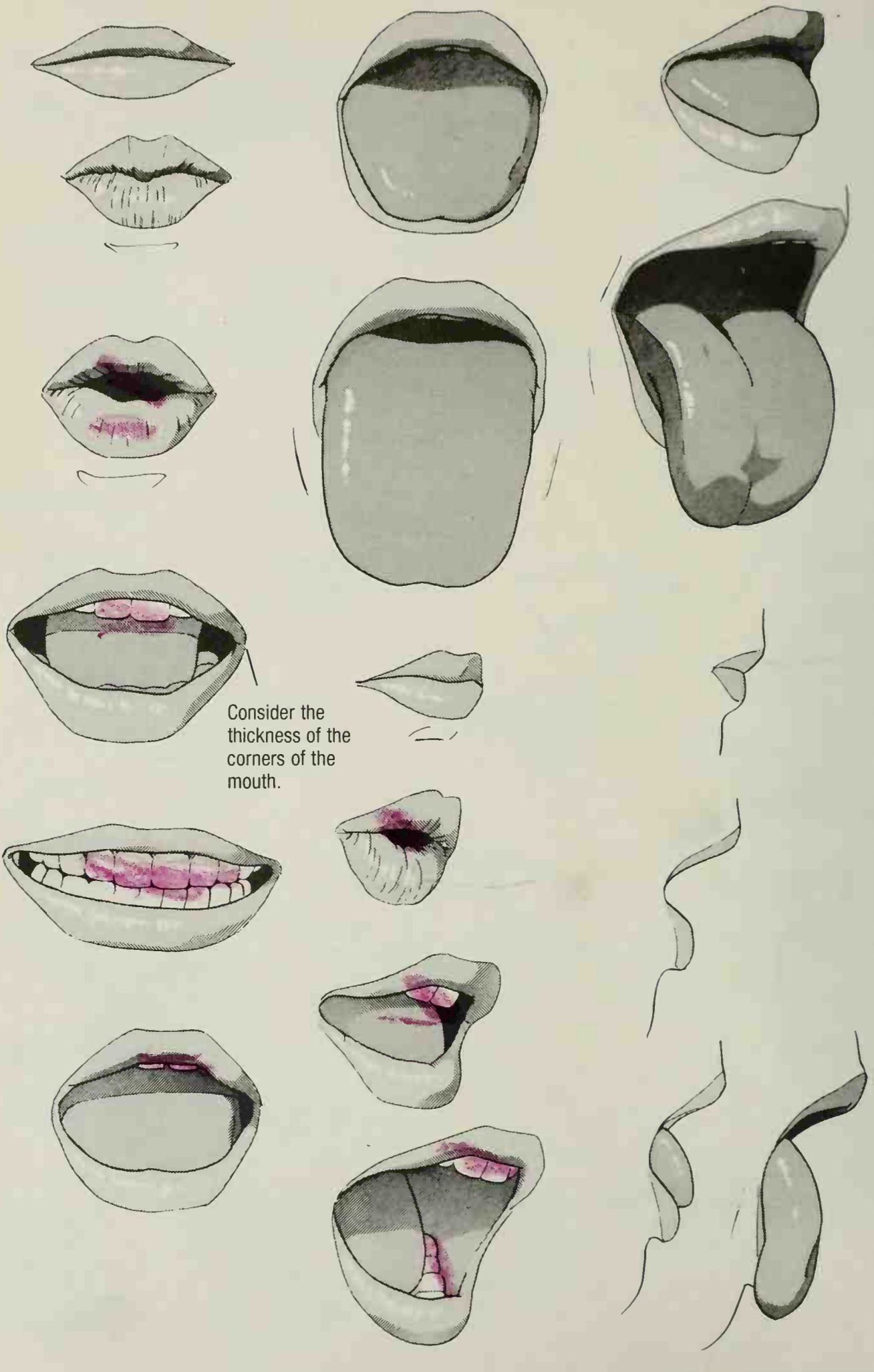
Various Eye Shapes



Various Nose Shapes



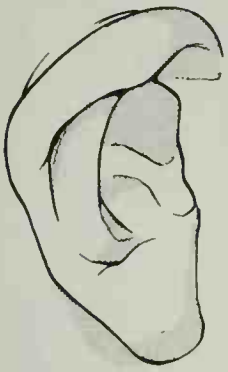
Various Mouth Shapes

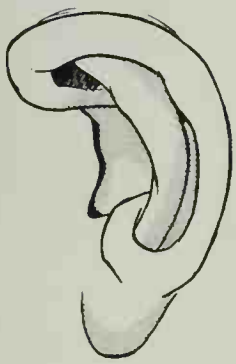


Consider the thickness of the corners of the mouth.

Various Ear Shapes

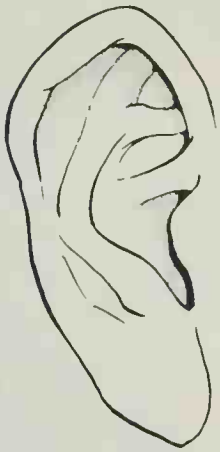
High Angle View



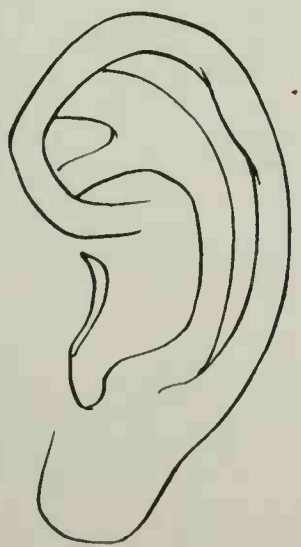


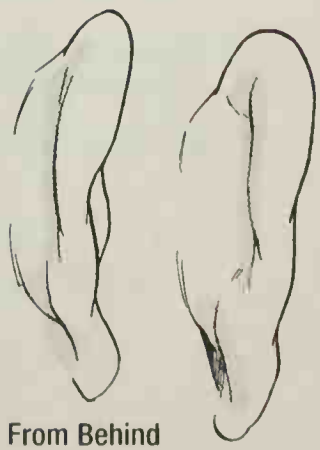
Low Angle View

Eye Level View



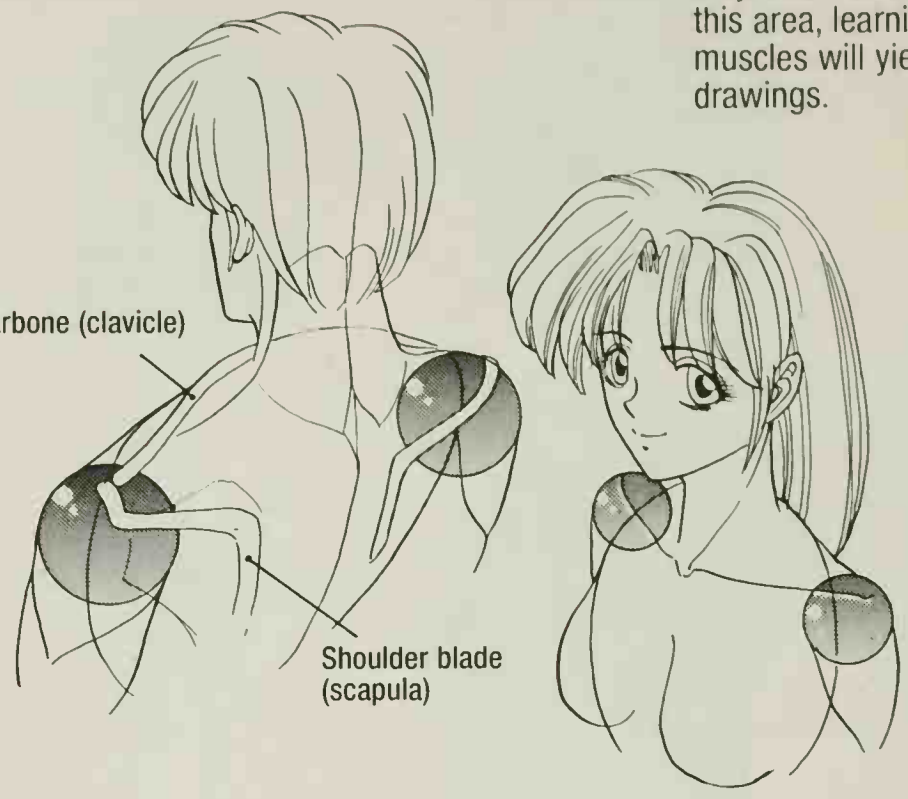
Basic Ear Lines

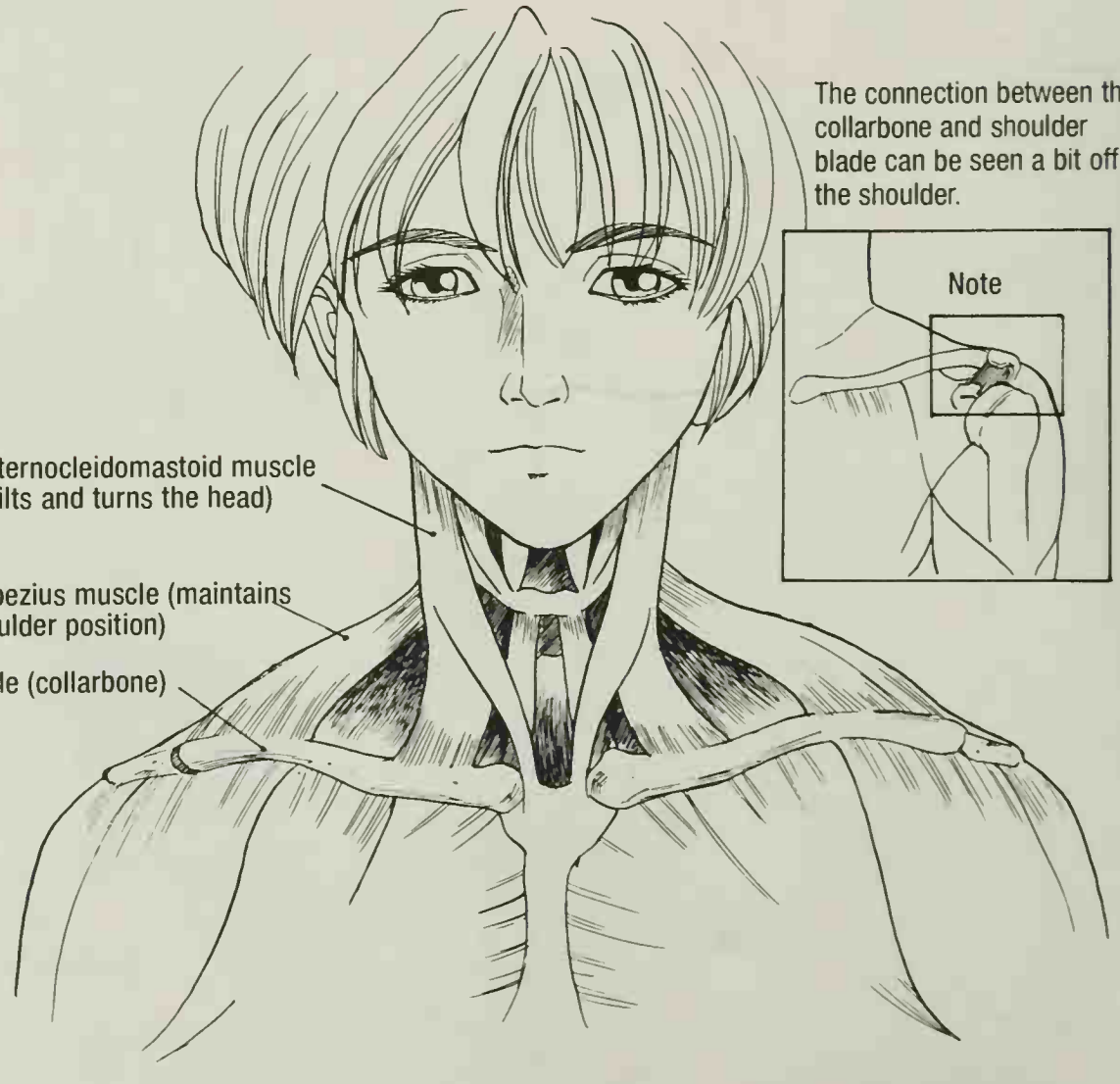


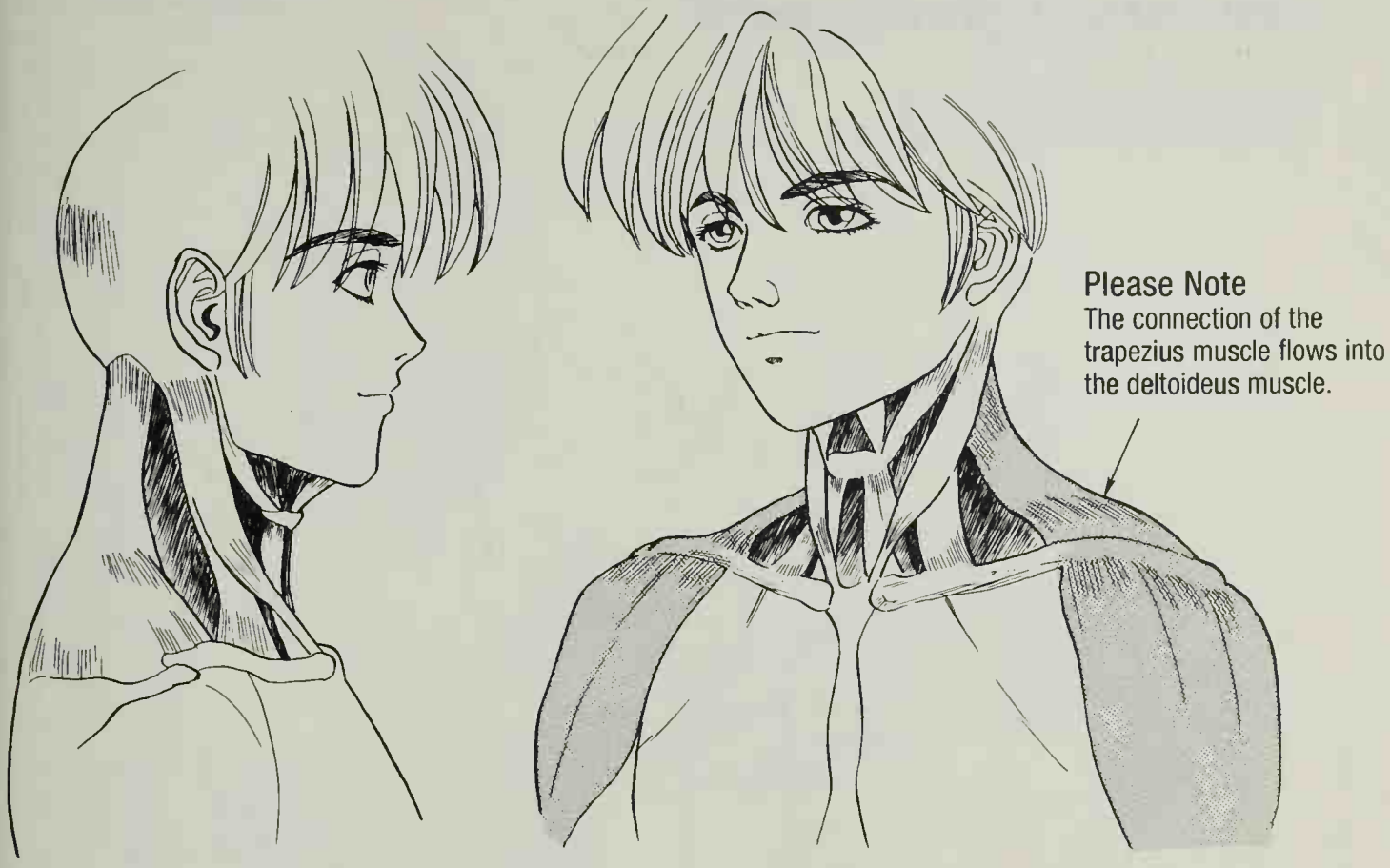


Construction of the Neck and Shoulders

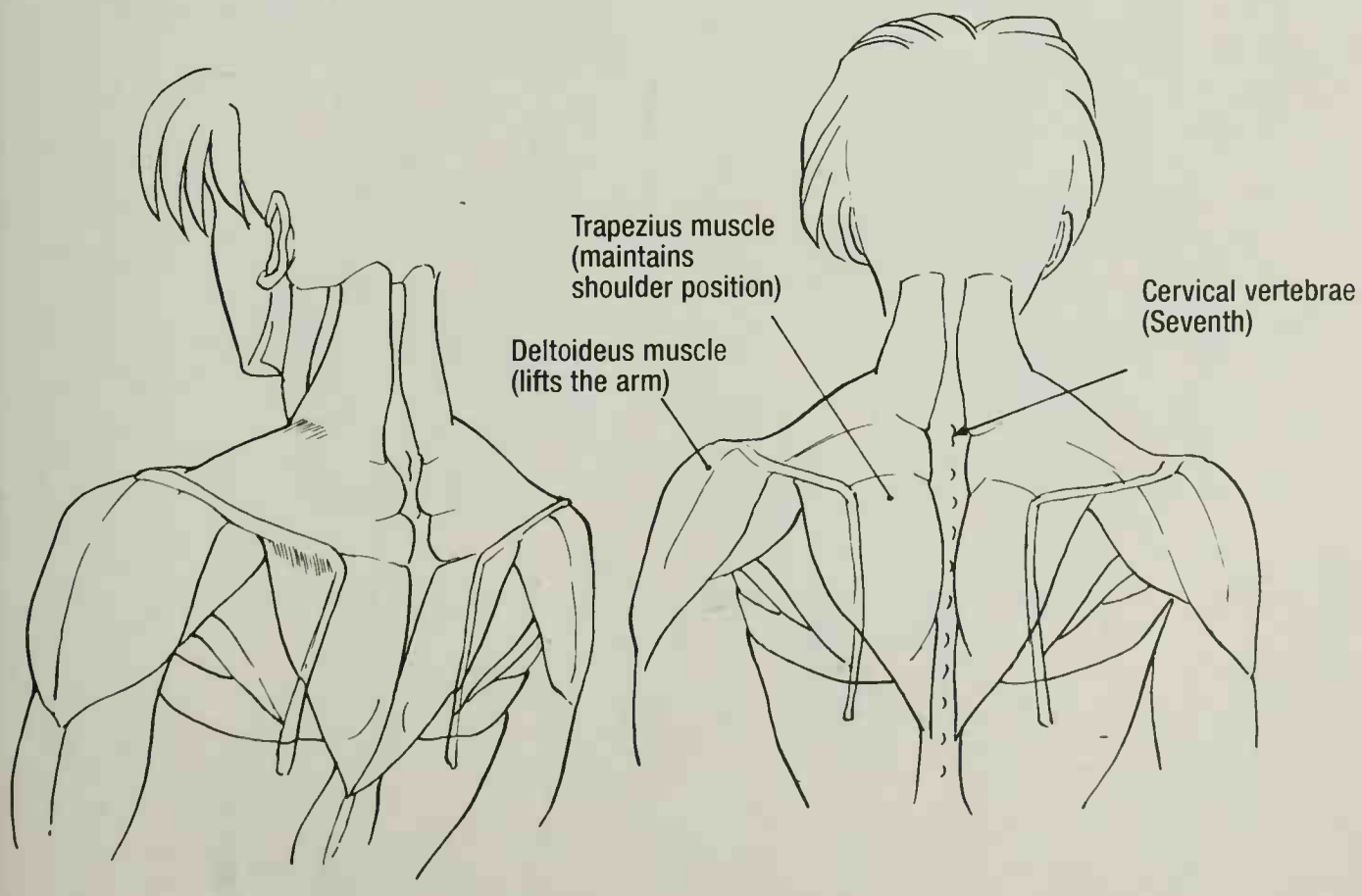
For manga, while the sternocleidomastoid muscle, collarbone and shoulder blades are all you need to pull off the construction of this area, learning about the make-up of the muscles will yield more reality in your drawings.





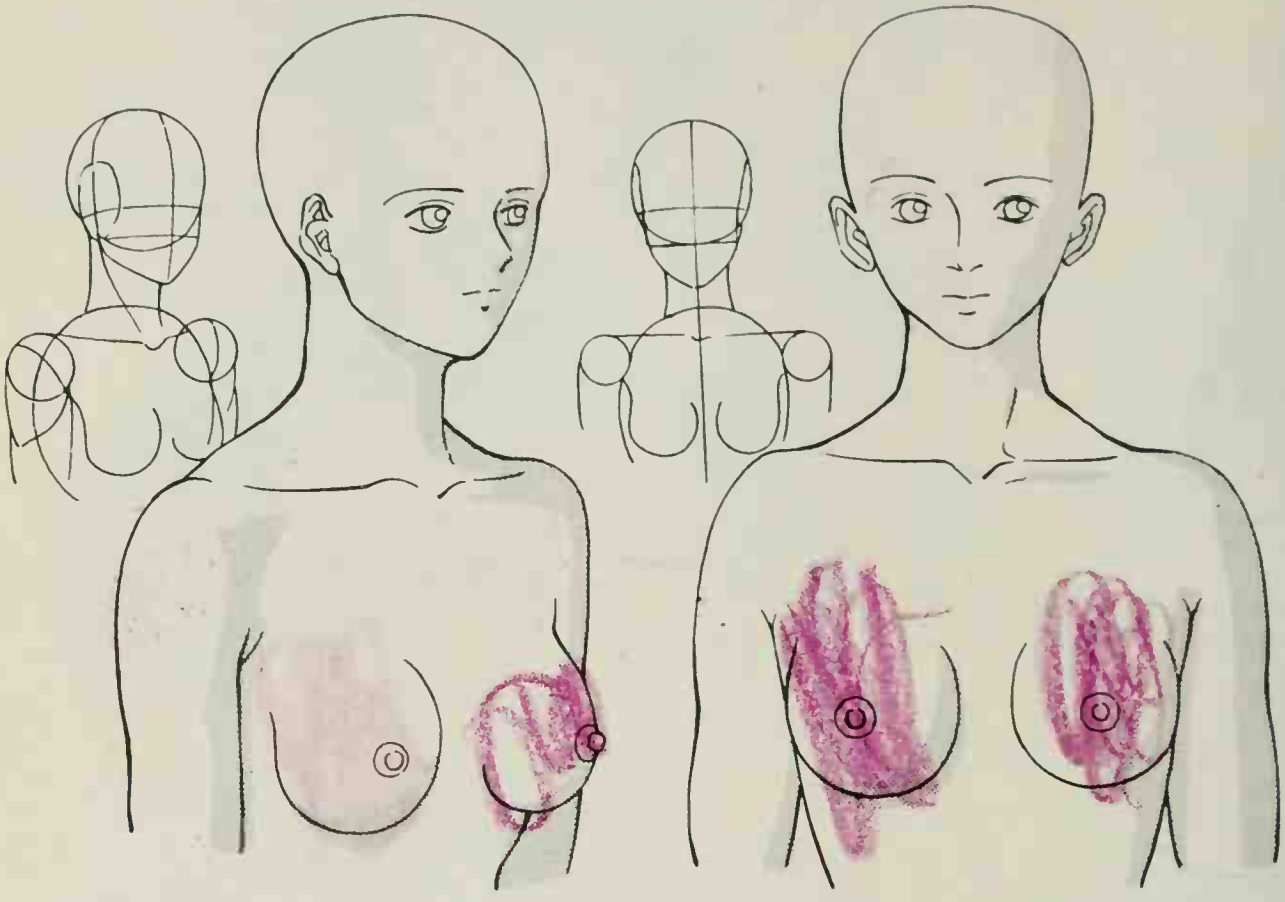


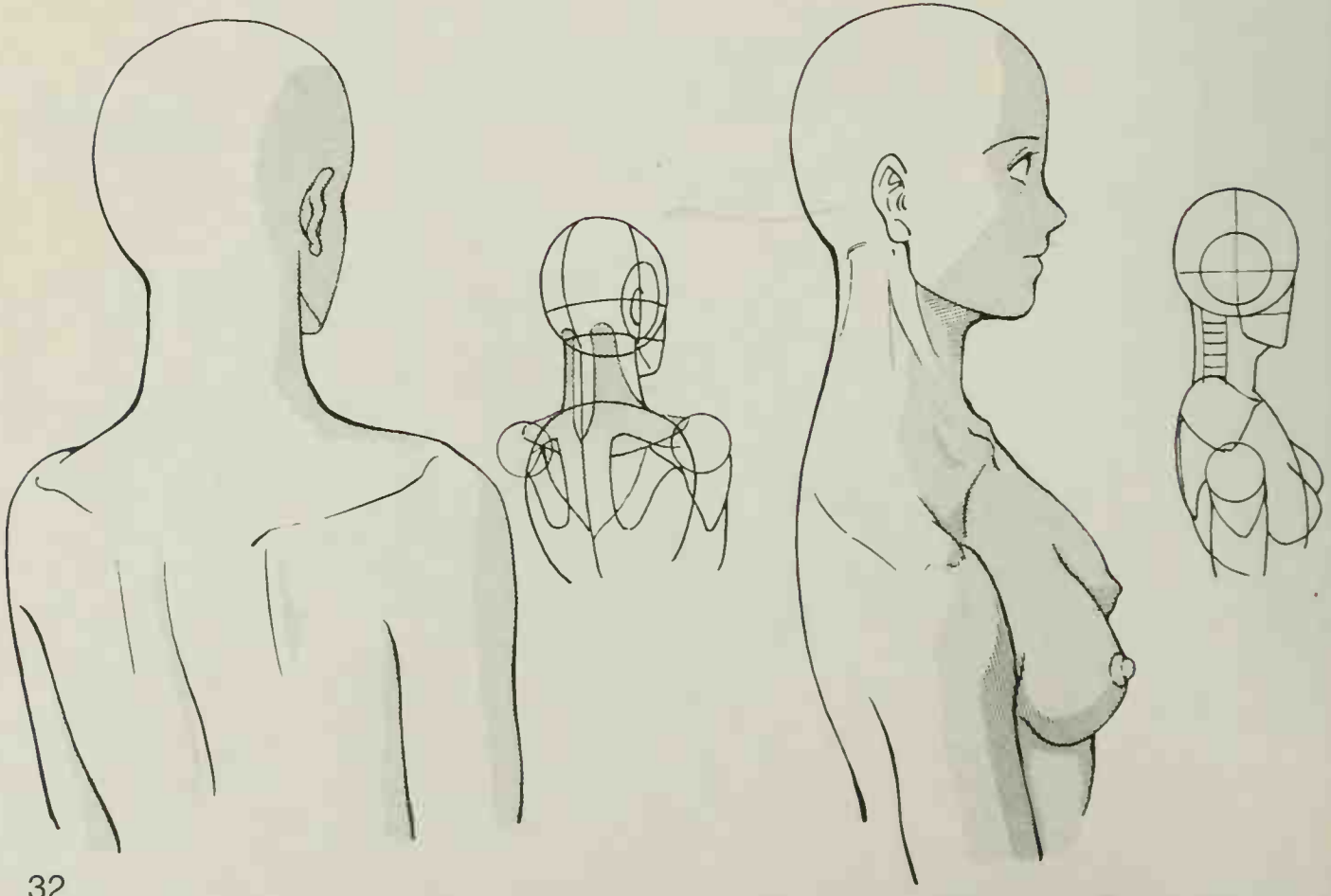
Please Note
The connection of the trapezius muscle flows into the deltoideus muscle.



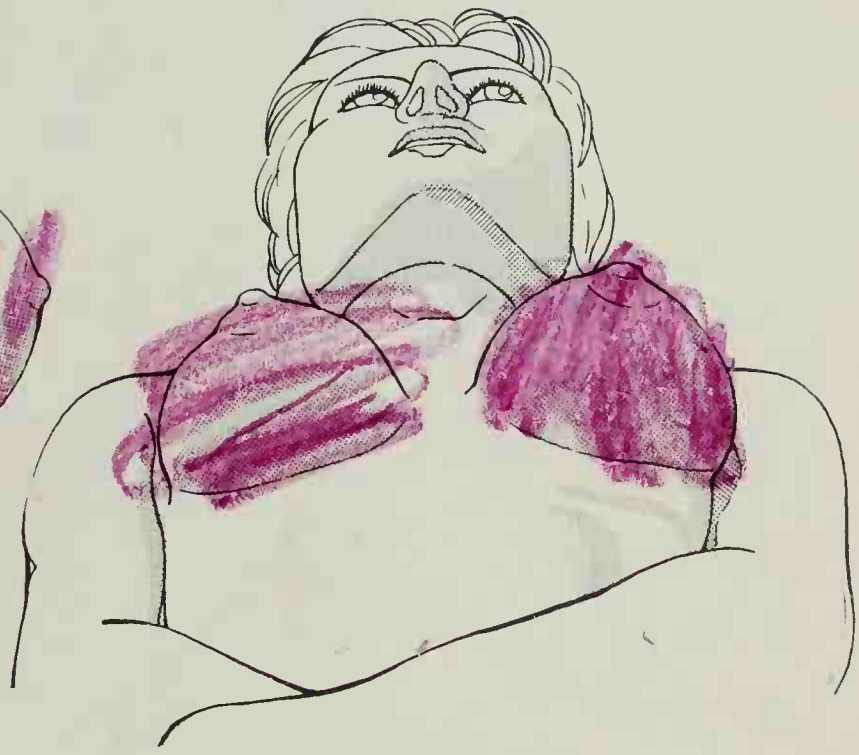
Neck Variations

Frontal View (Female)

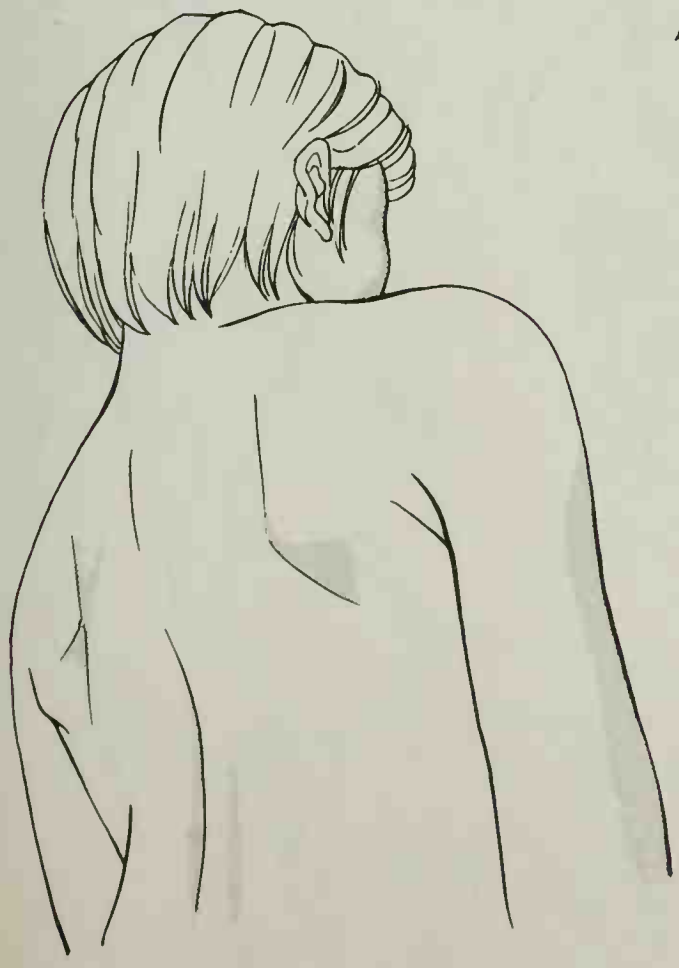




Low Angle (Female)

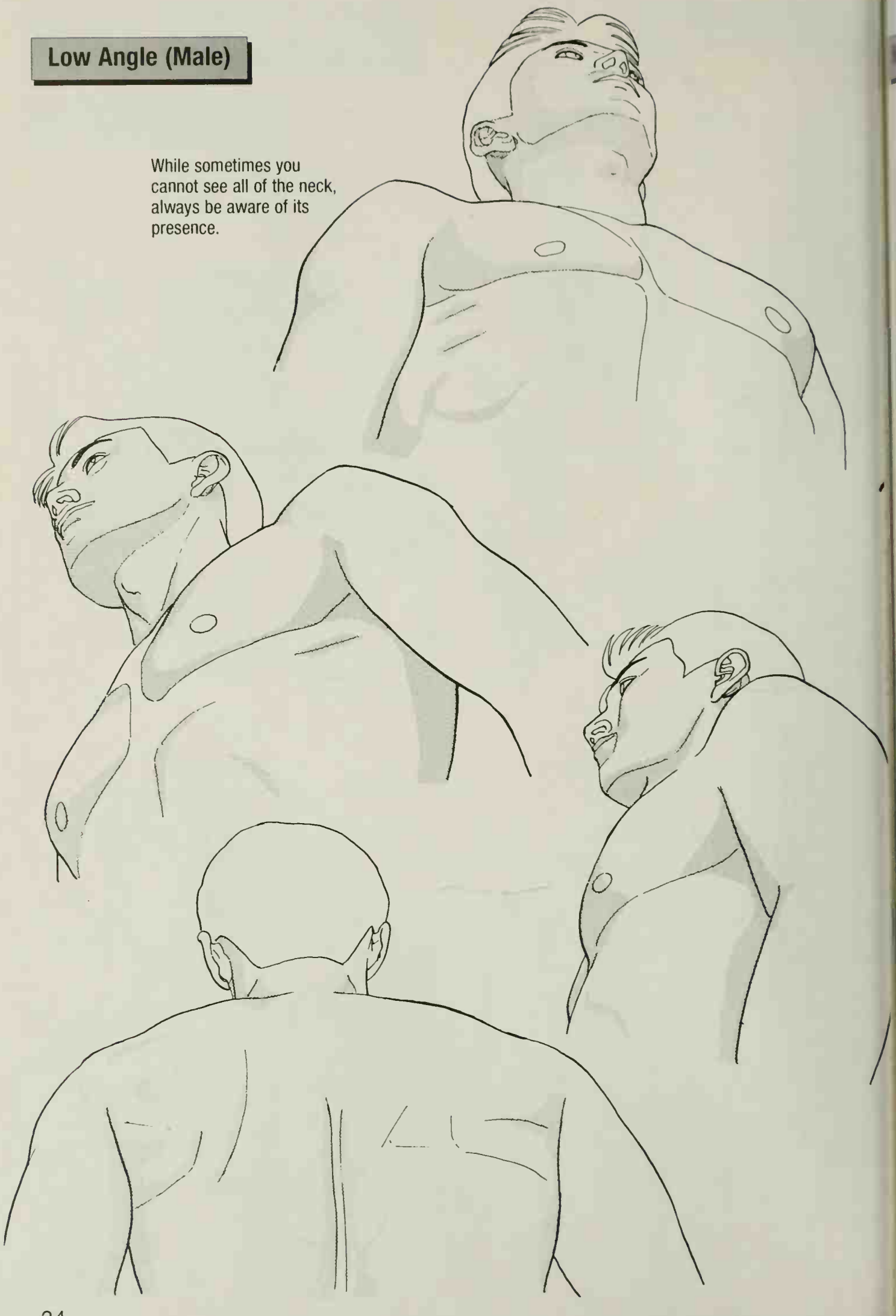


Notice how the base of the throat and the torso are connected.

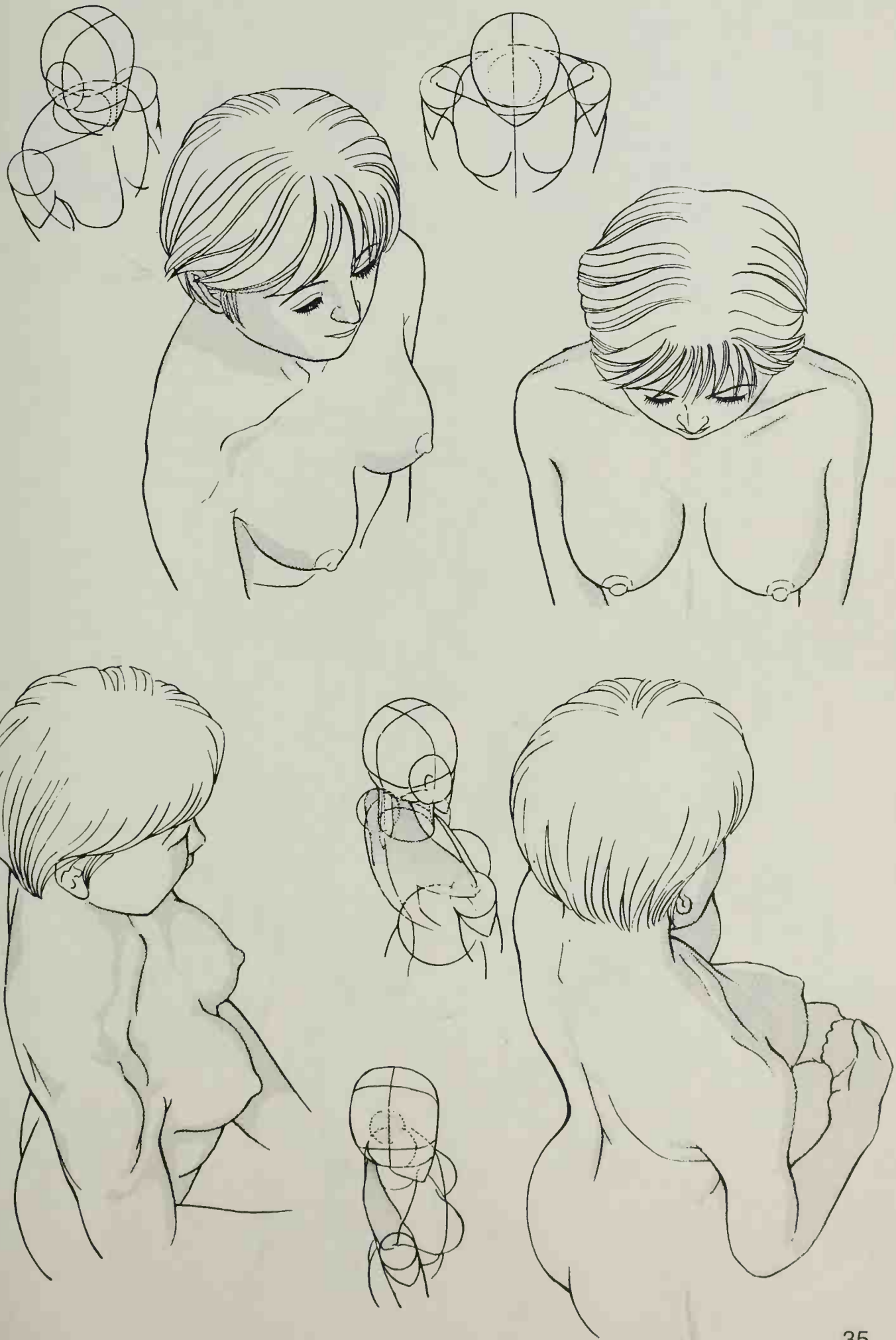


Low Angle (Male)

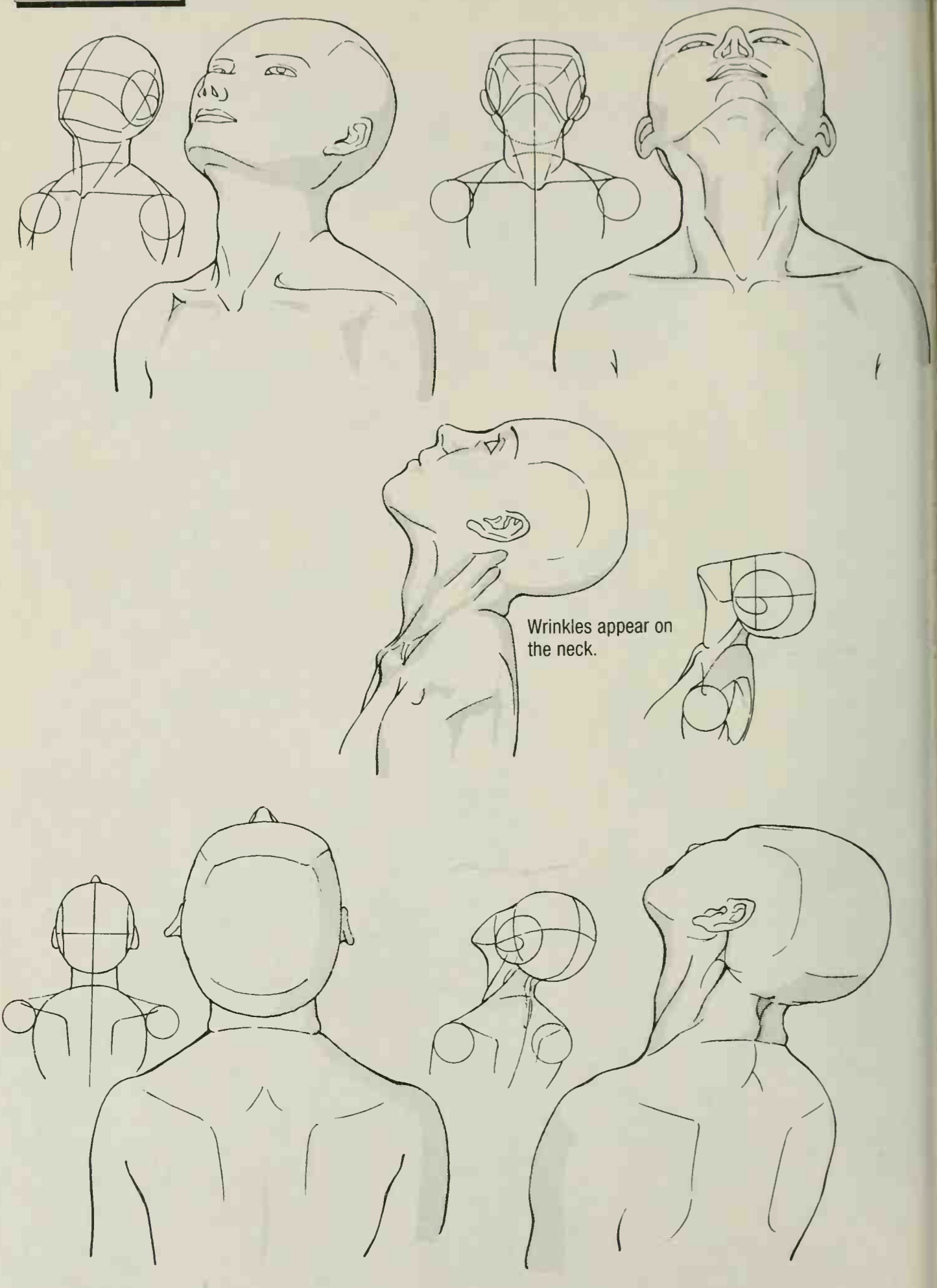
While sometimes you cannot see all of the neck, always be aware of its presence.



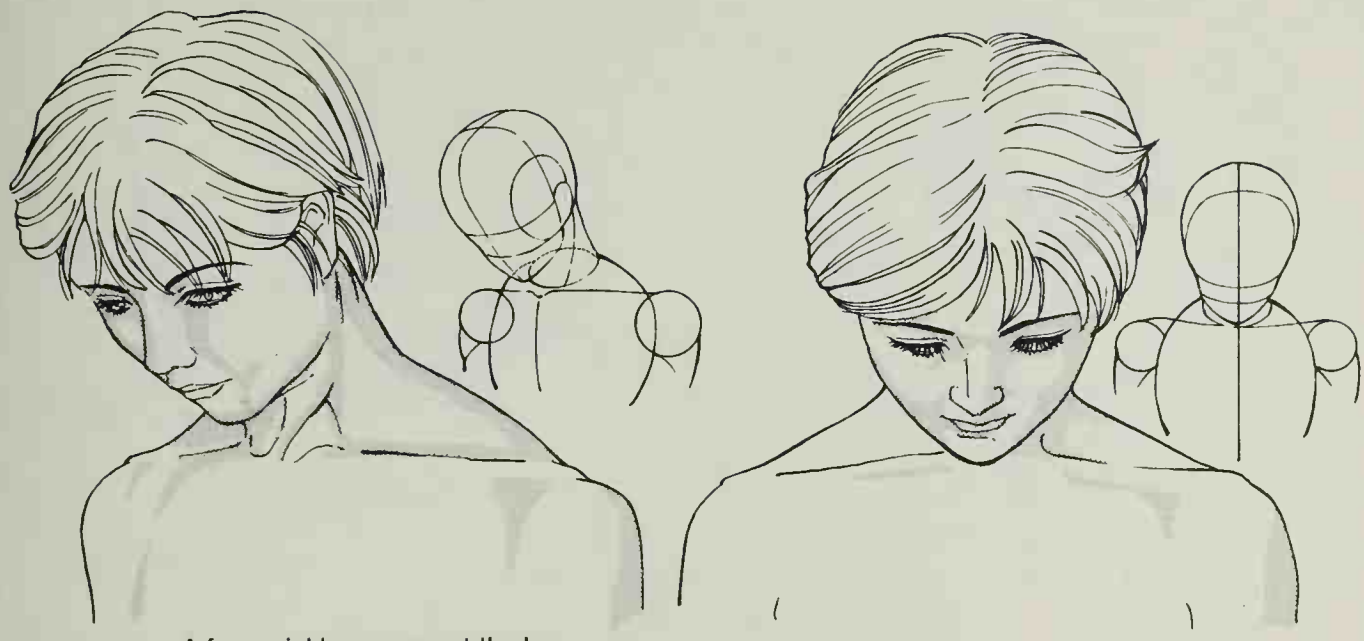
High Angle (Female)



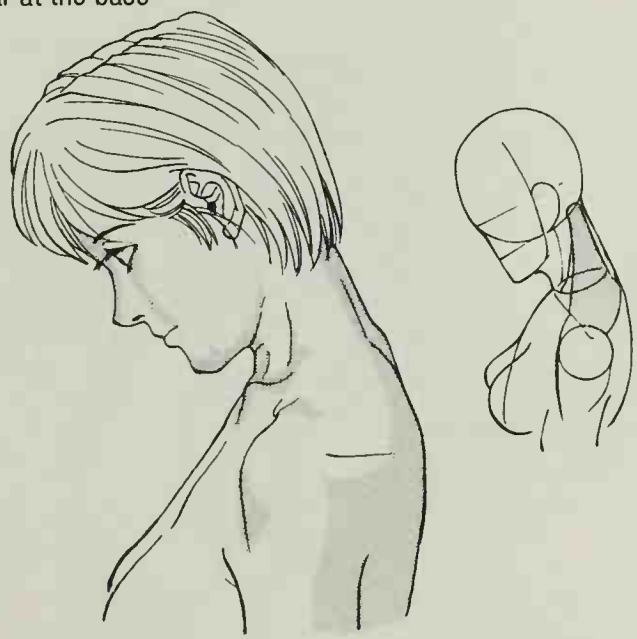
Looking Up

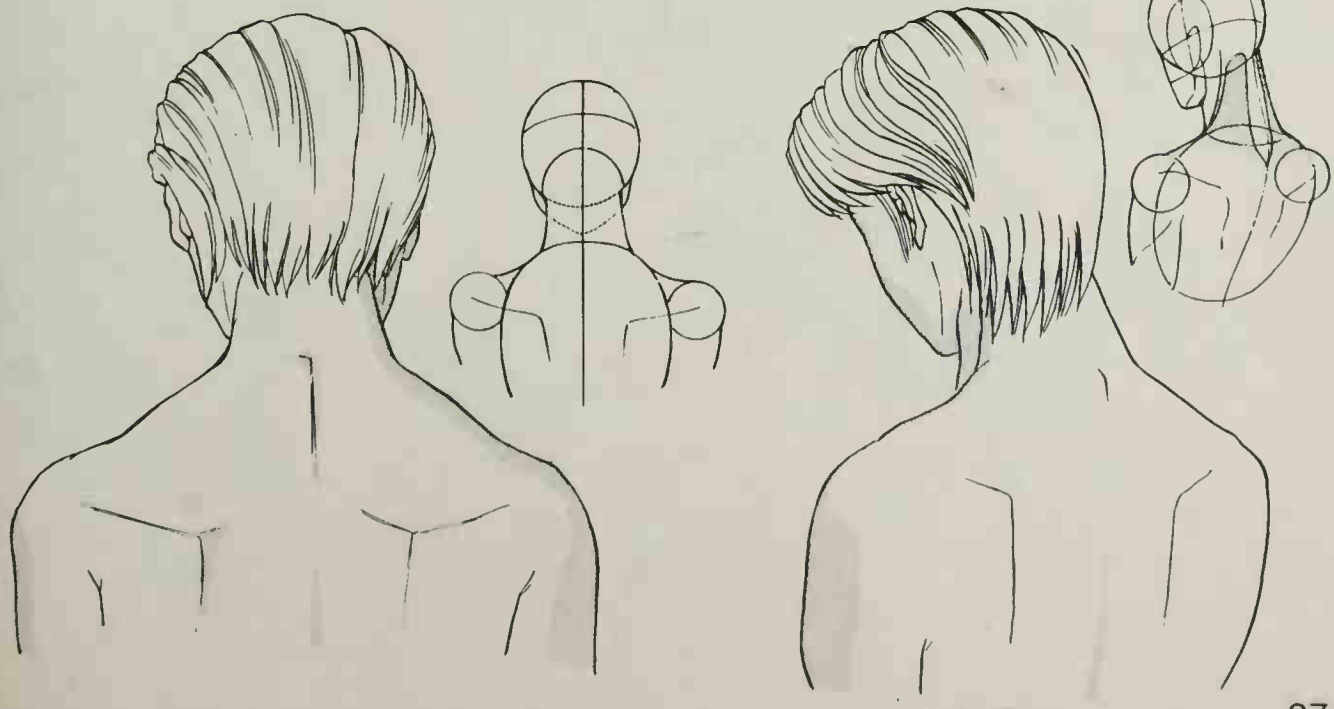


Looking Down

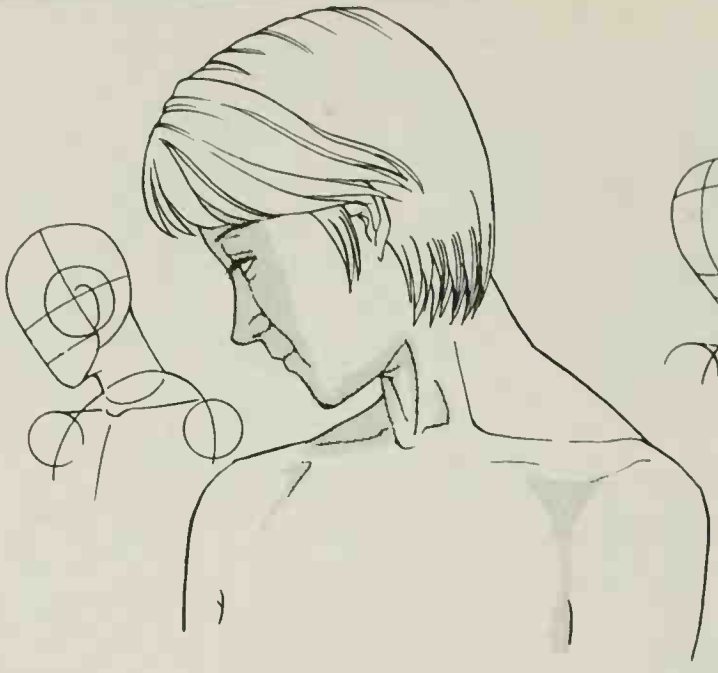


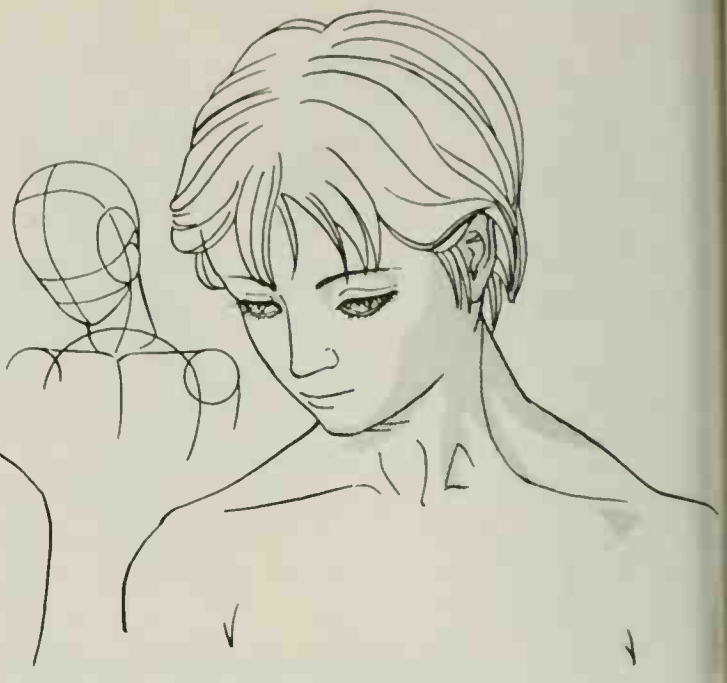
A few wrinkles appear at the base of the throat.

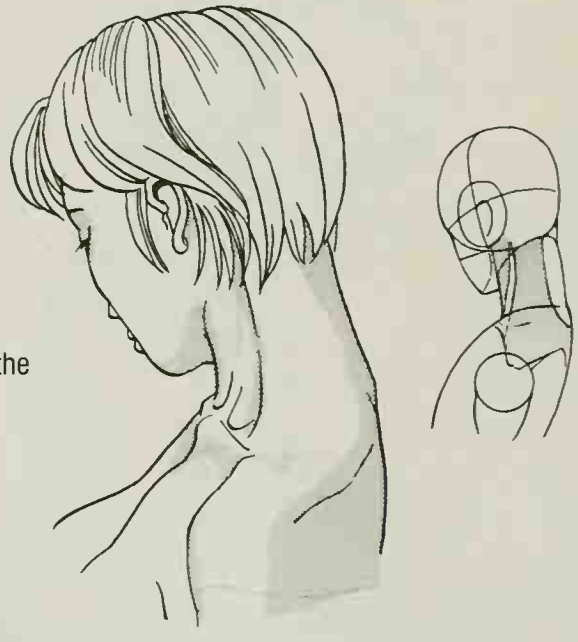




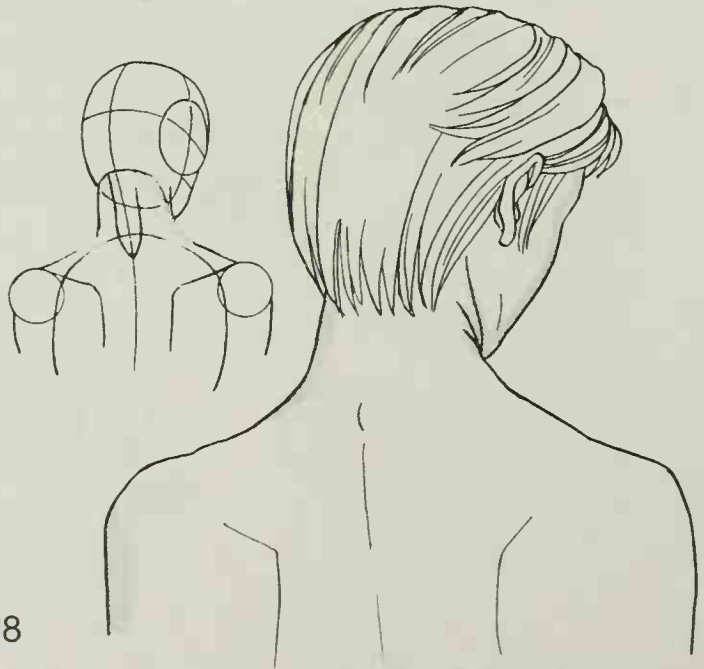
Looking Down at an Angle



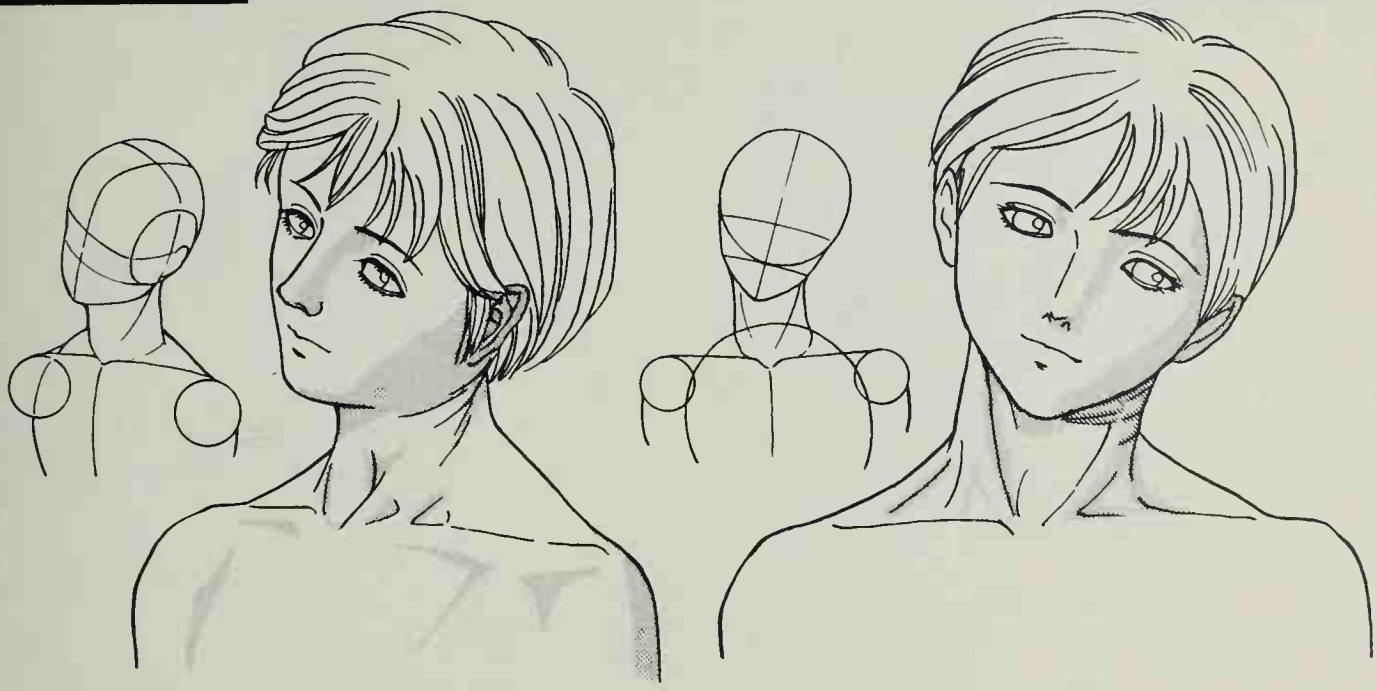


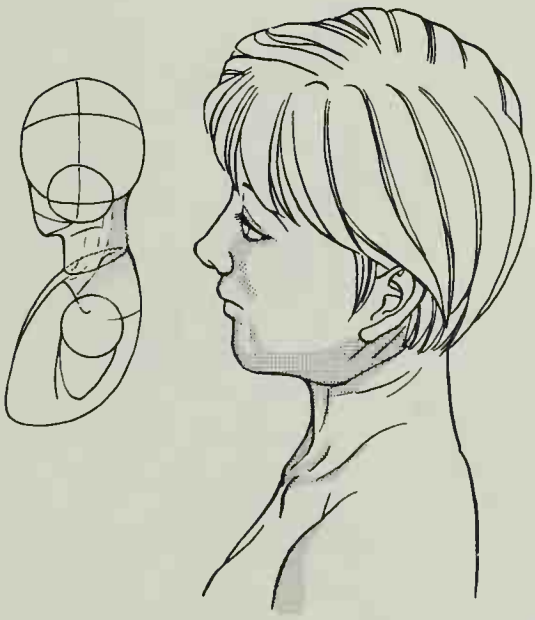


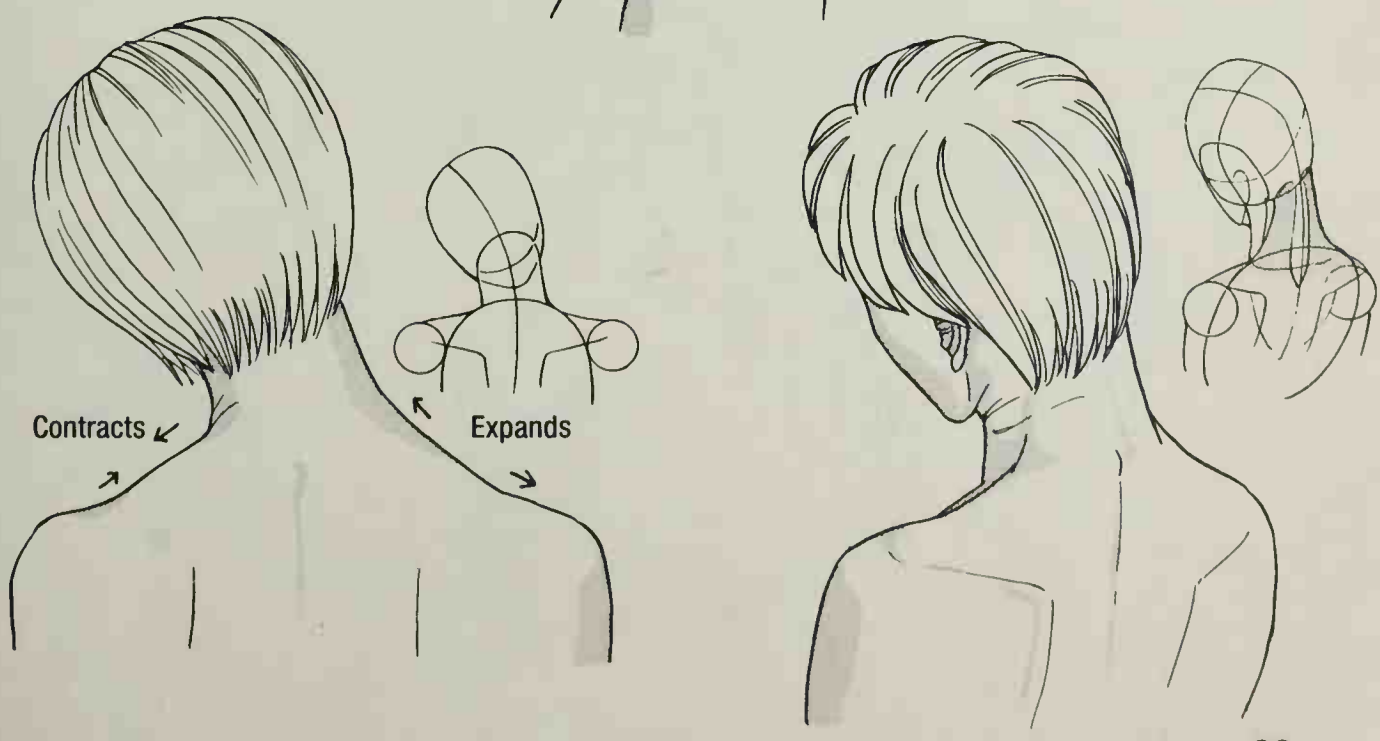
Notice the balance between the neck and the head.



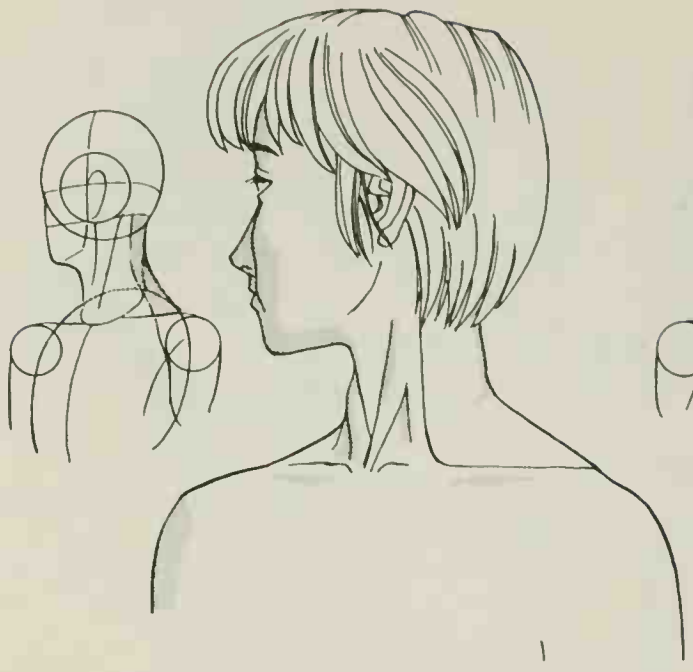
Tilting the Head

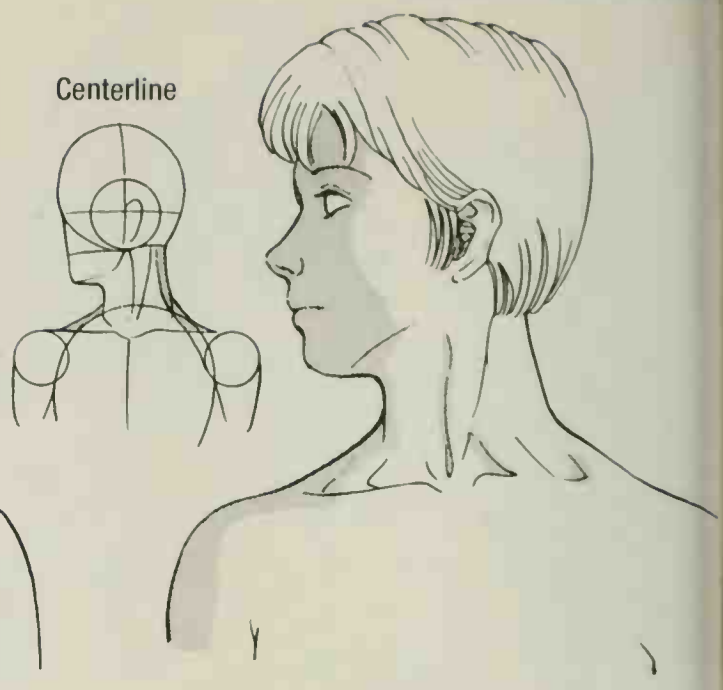


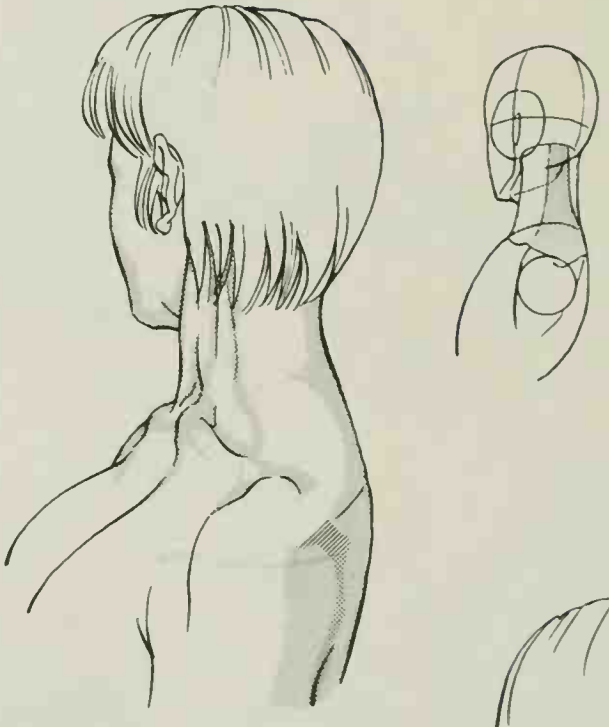




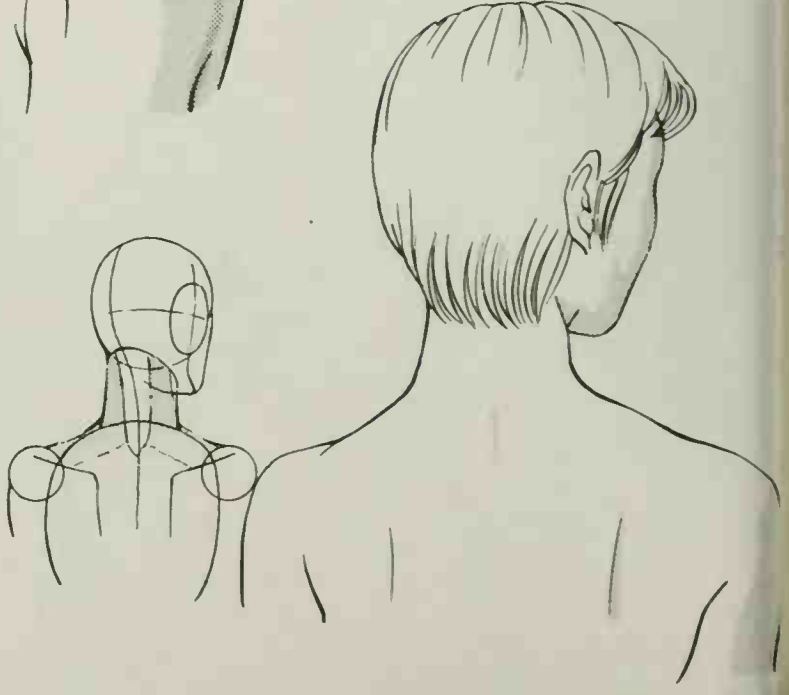
Looking to the Side



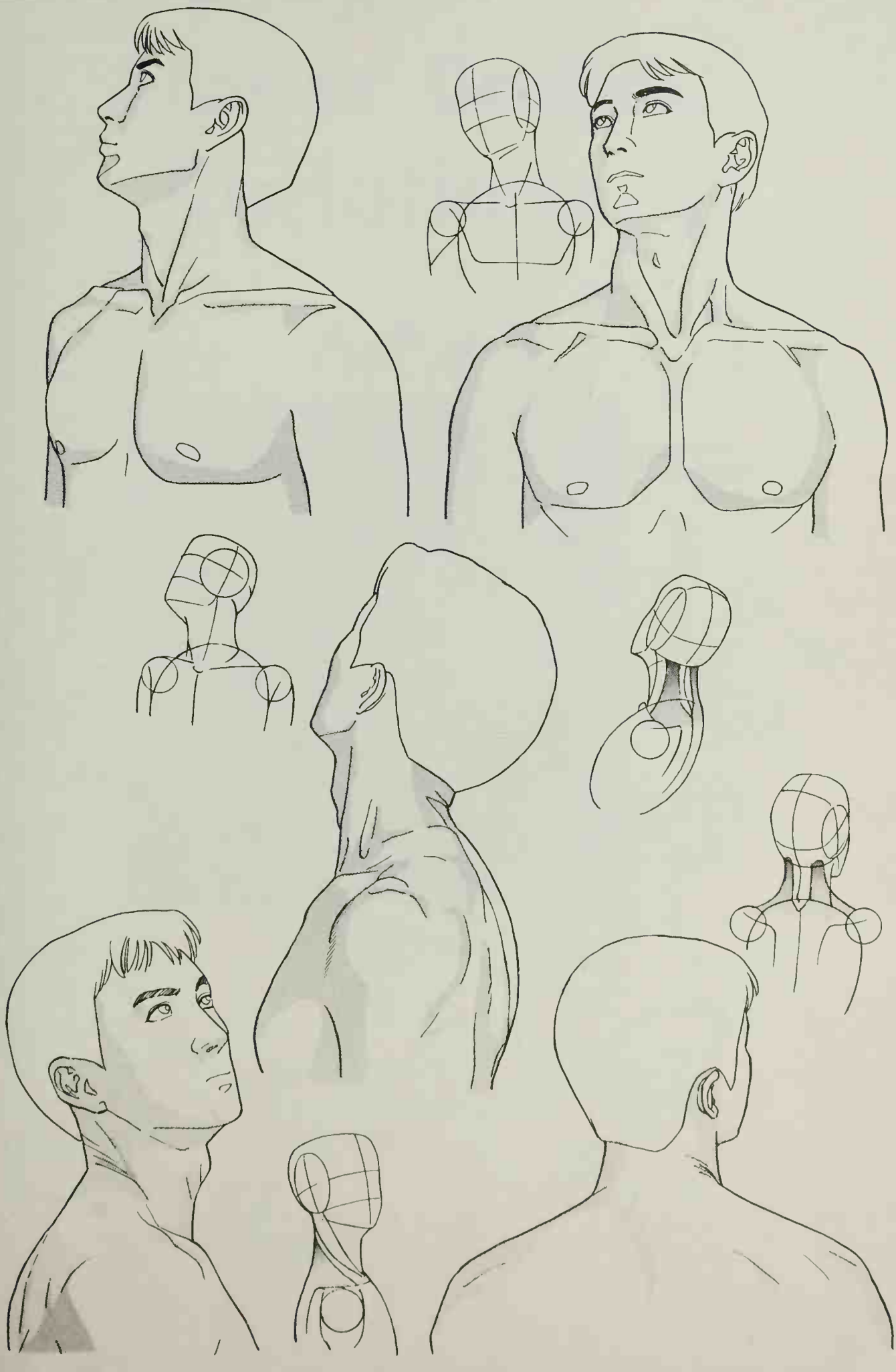




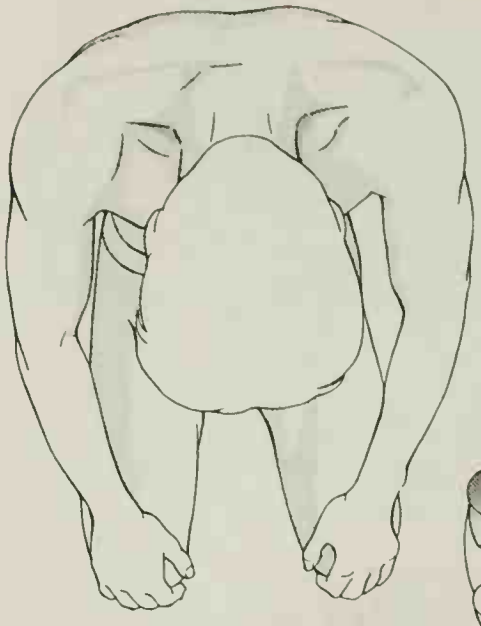
In real life, wrinkles appear quite a bit; however, in manga, they are made less prominent.



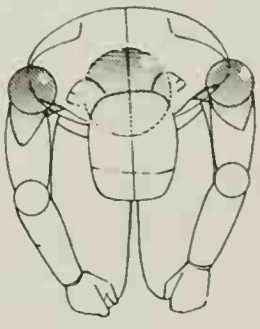
Looking Up at an Angle

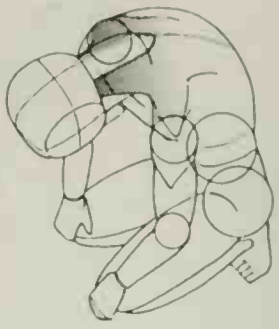


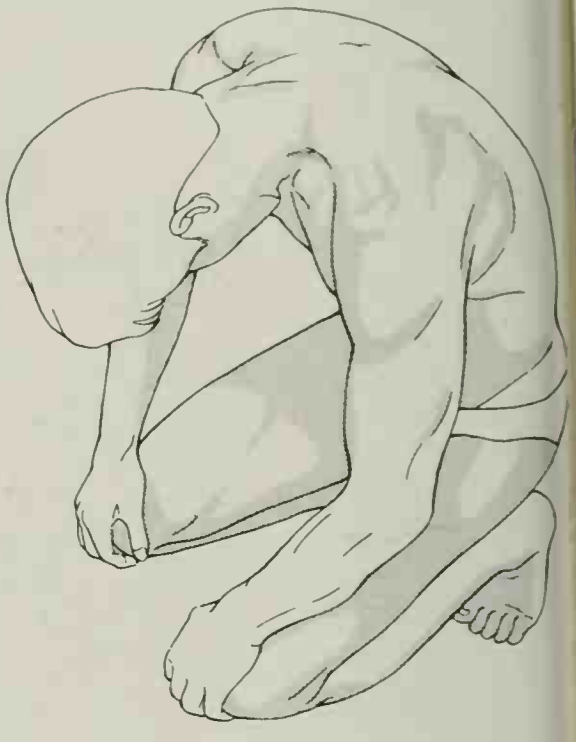
Lowering the Head

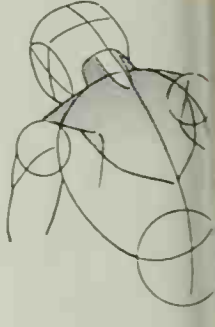


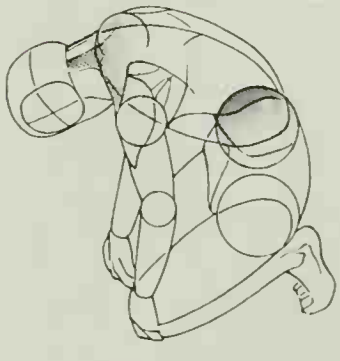
A cavity appears between the collarbone and the trapezius muscle.

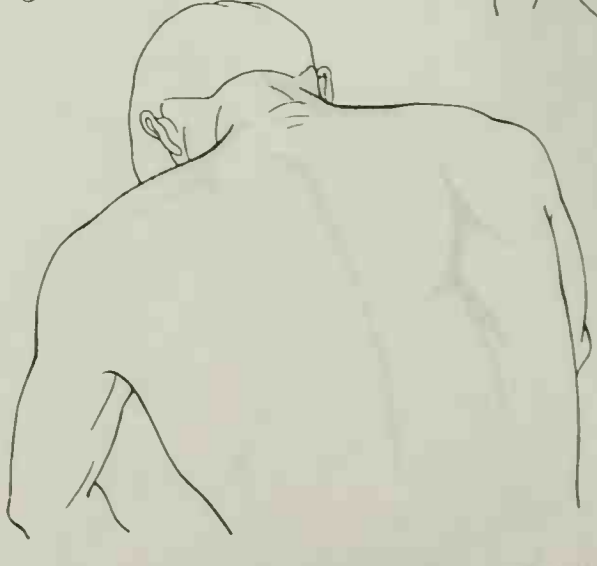












Chapter 2
Upper Body Variations

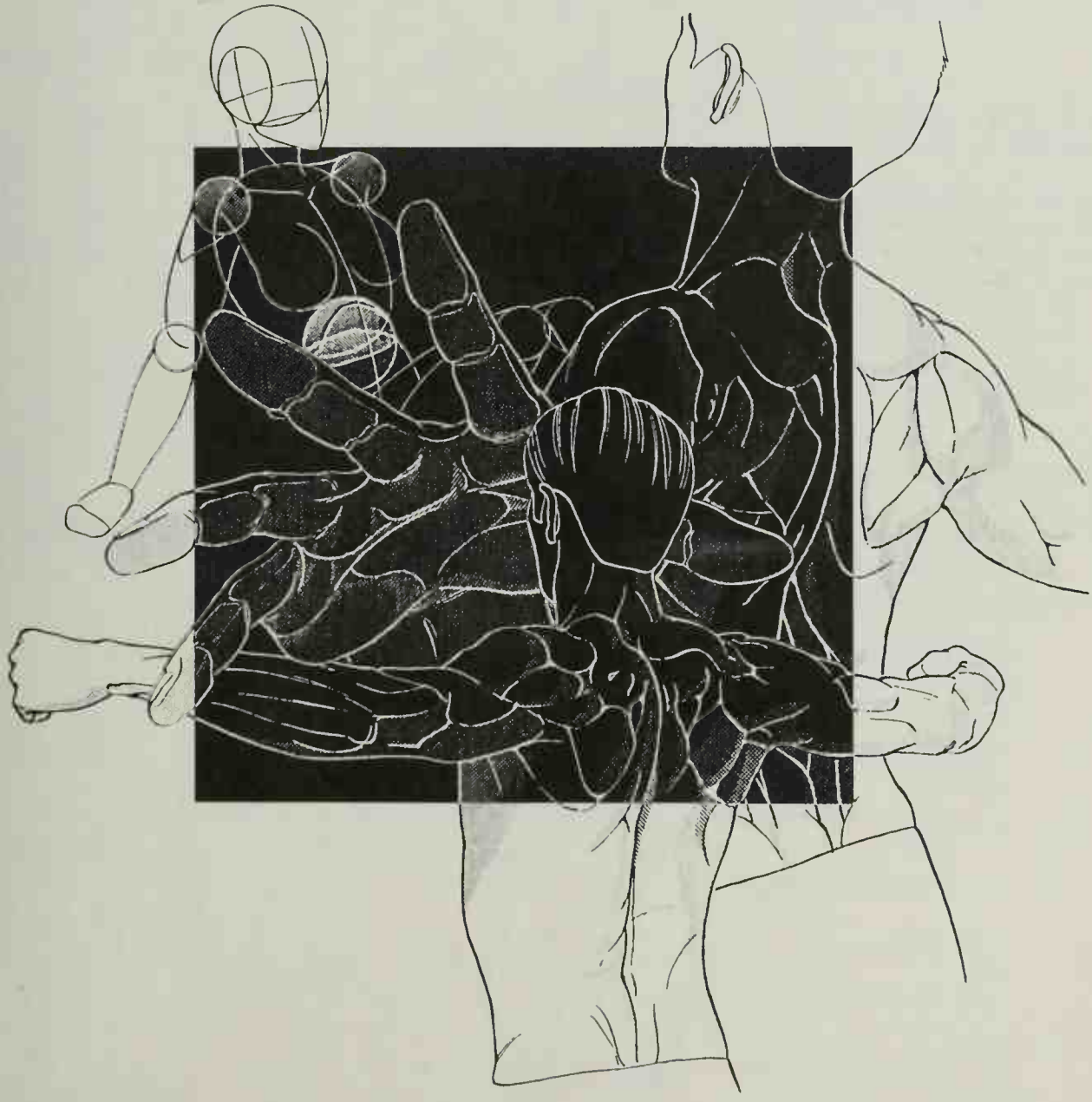
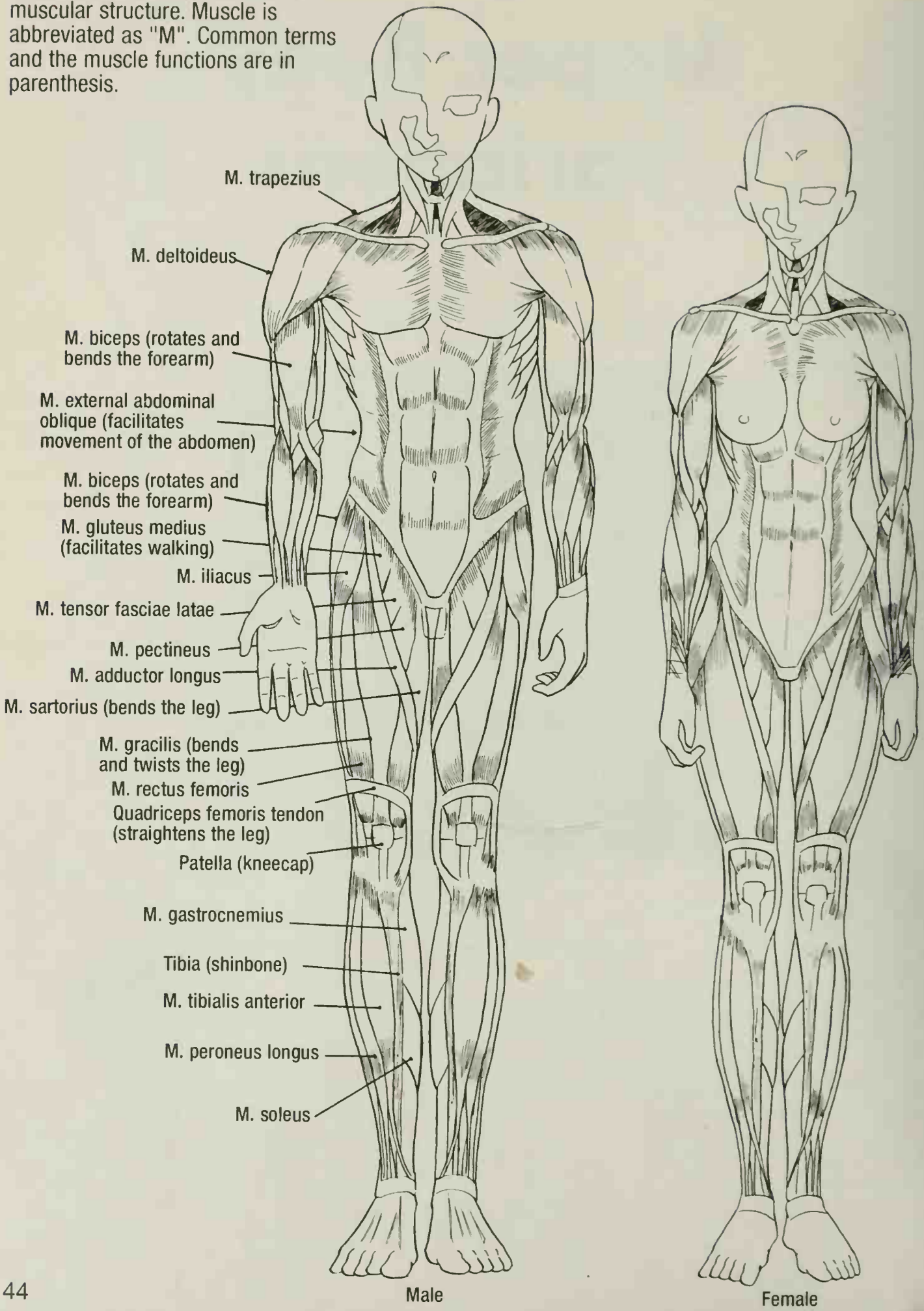
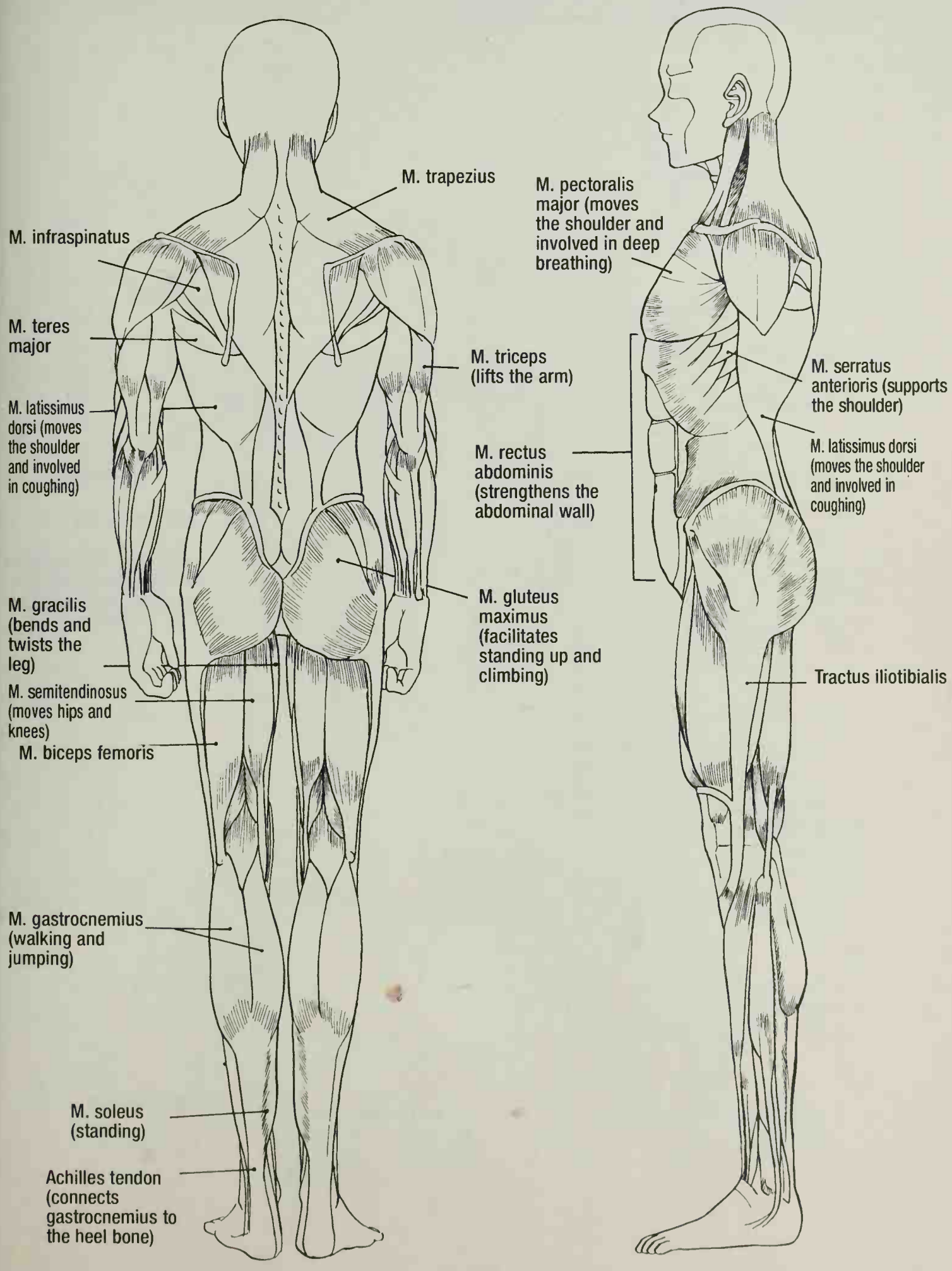


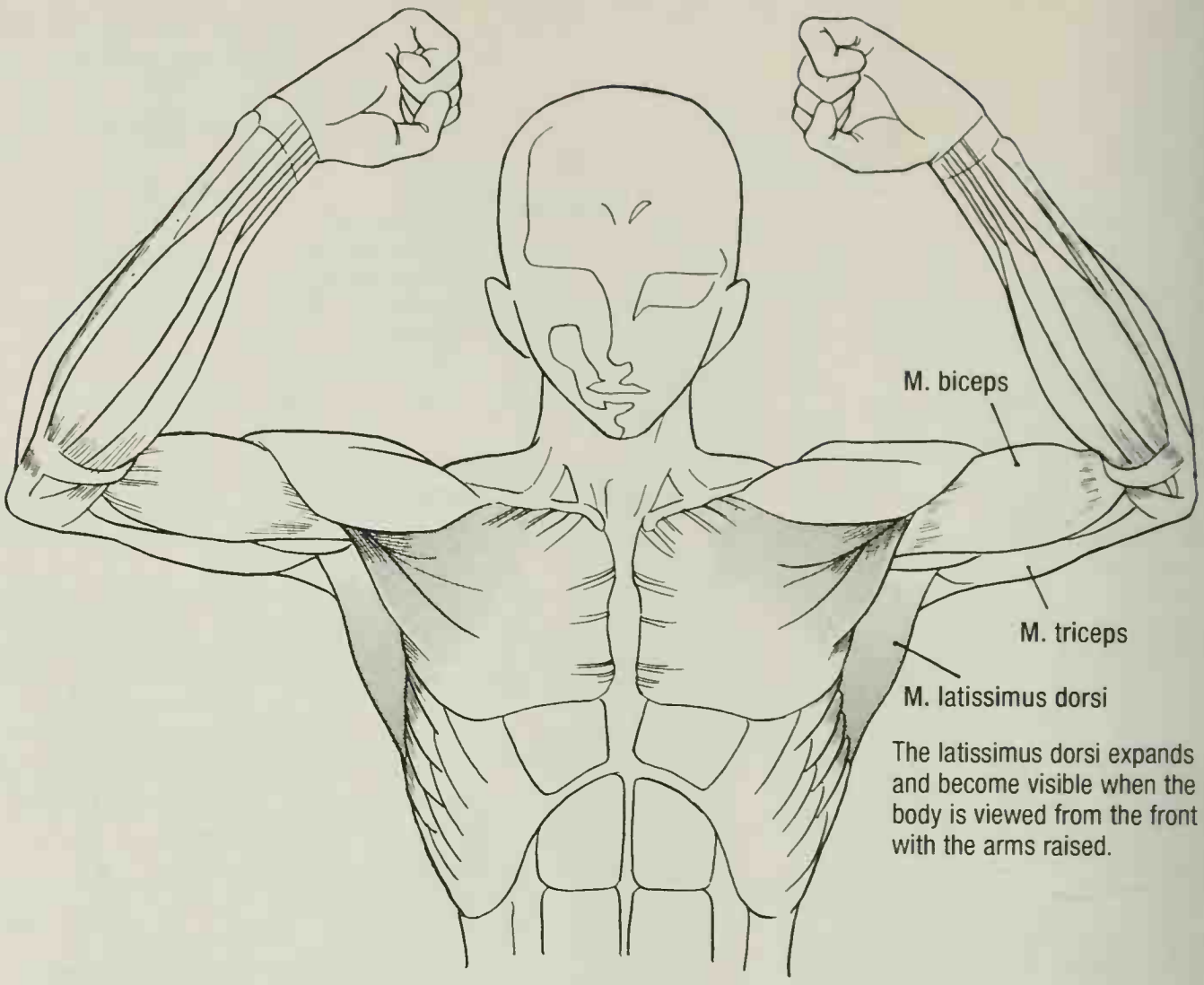
Illustration of Body Muscles

Men and women have the same muscular structure. Muscle is abbreviated as "M". Common terms and the muscle functions are in parenthesis.




M. trapezius
M. infraspinatus
M. teres major
M. latissimus dorsi (moves the shoulder and involved in coughing)
M. triceps (lifts the arm)
M. gracilis (bends and twists the leg)
M. semitendinosus (moves hips and knees)
M. biceps femoris
M. gastrocnemius (walking and jumping)
M. soleus (standing)
Achilles tendon (connects gastrocnemius to the heel bone)
M. pectoralis major (moves the shoulder and involved in deep breathing)
M. rectus abdominis (strengthens the abdominal wall)
M. gluteus maximus (facilitates standing up and climbing)
M. serratus anterioris (supports the shoulder)
M. latissimus dorsi (moves the shoulder and involved in coughing)
Tractus iliotibialis

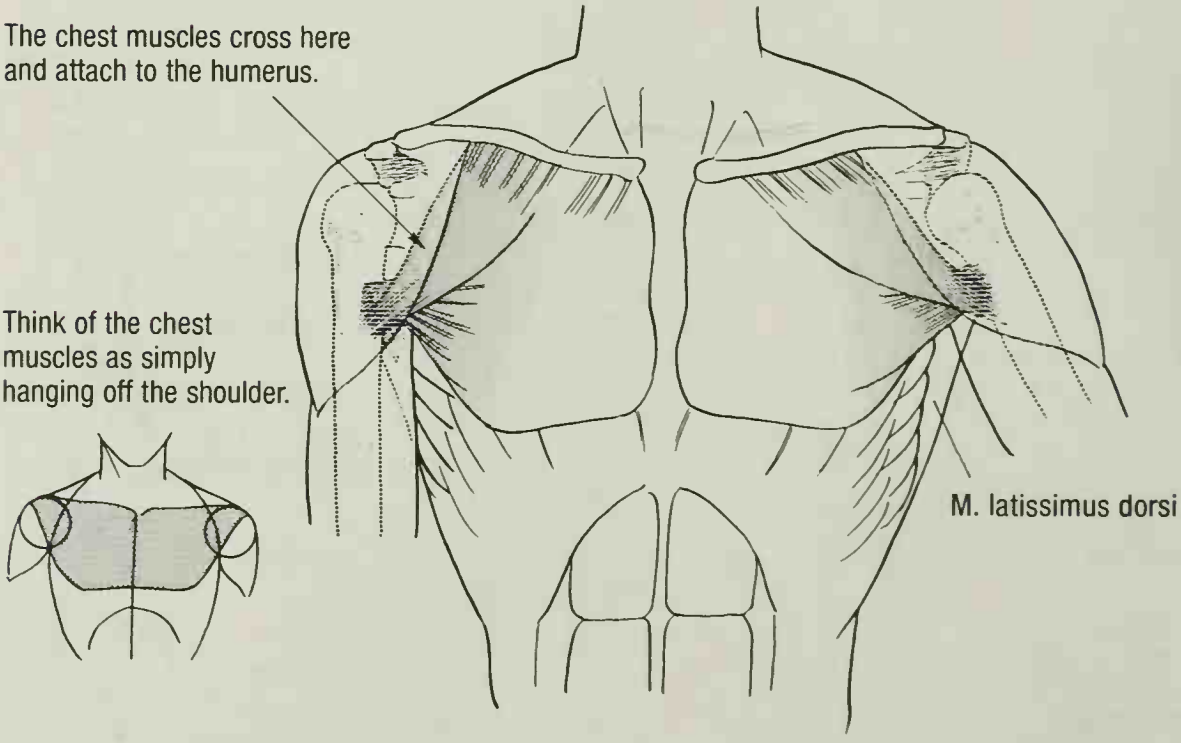
Construction of Frontal Body Muscles



The latissimus dorsi expands and become visible when the body is viewed from the front with the arms raised.

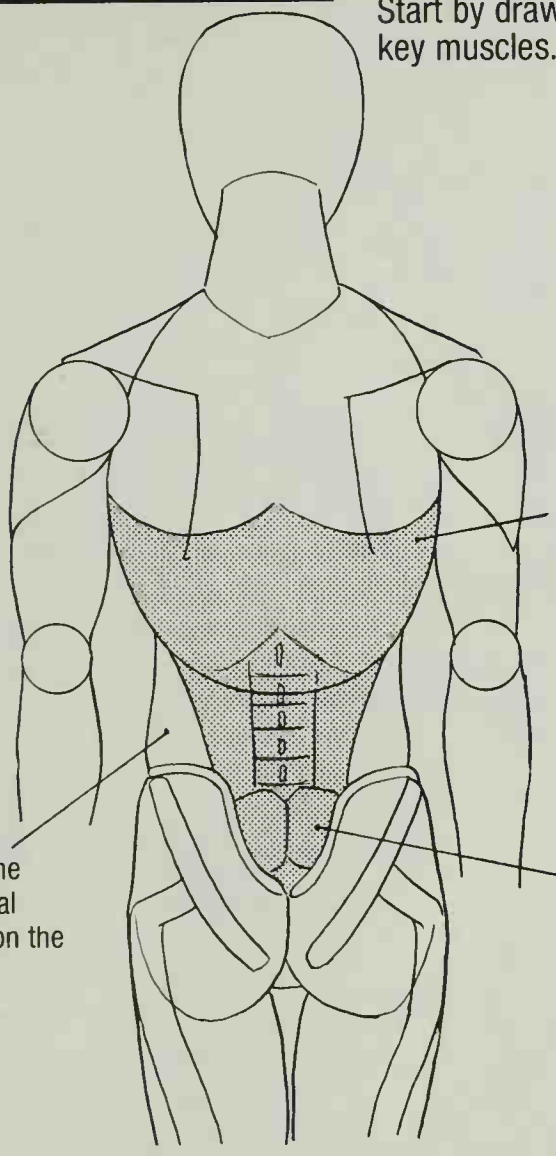
The chest muscles cross here and attach to the humerus.

Think of the chest muscles as simply hanging off the shoulder.



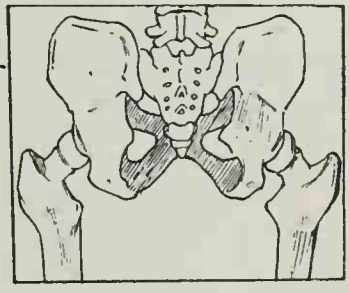
Balancing the Back Muscles

Muscles are constructed on the foundation of the skeletal framework.
Start by drawing a simplified skeleton. Then, draw the key muscles.



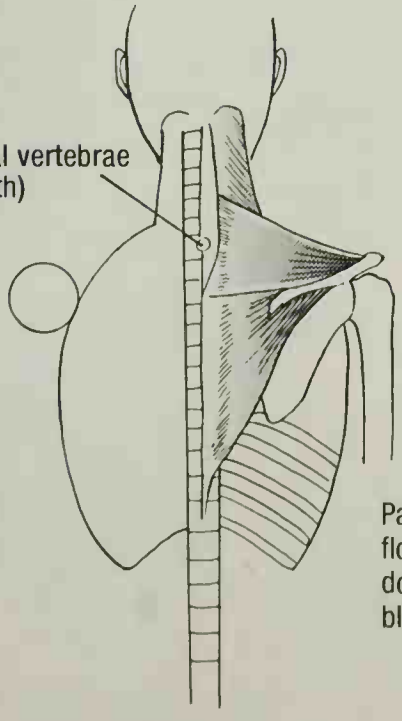
Think of the latissimus dorsi as flowing down the ribs and hanging a bit off the shoulder blade.

Pay attention to the external abdominal oblique muscles on the sides.



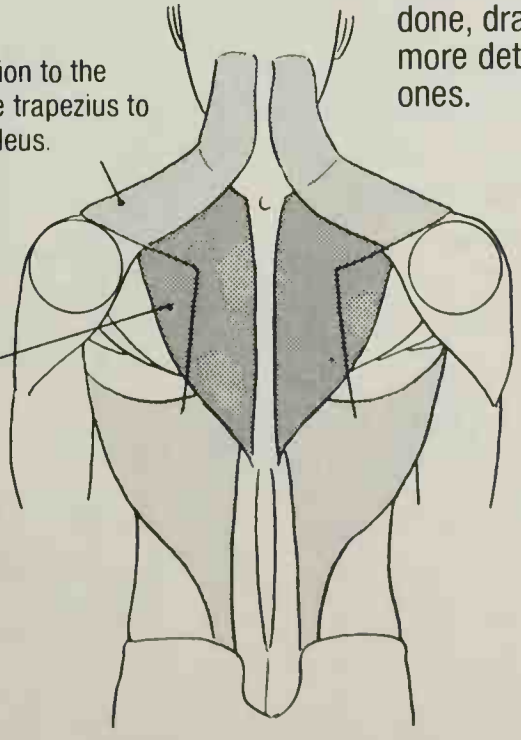
Consider the hipbone as a standard for establishing the area around the buttocks.

Once the key muscles are done, draw more detailed ones.



Cervical vertebrae (Seventh)

The positioning of the trapezius should look like this illustration.



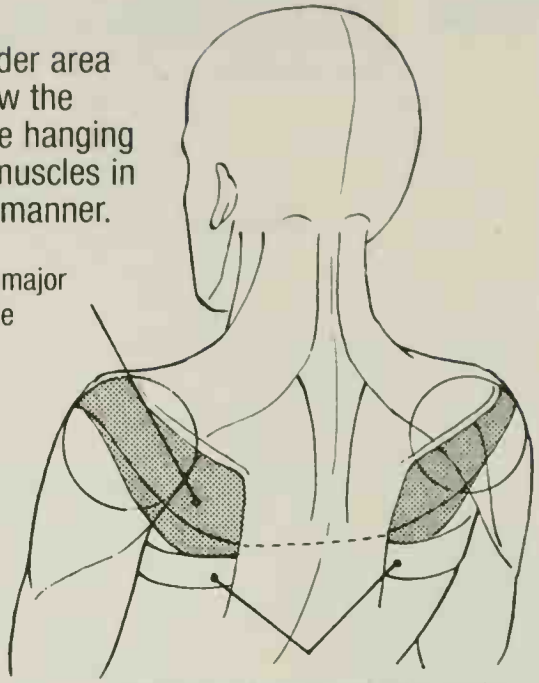
Pay attention to the flow of the trapezius to the deltoideus.

Pay attention to the flow of the muscles down from the shoulder blade.

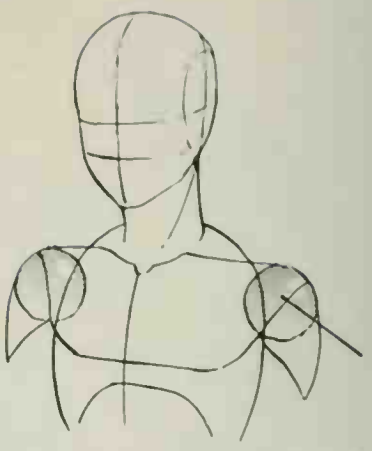
Shoulder Area

When constructing the shoulder area from the frontal position, draw the chest muscles as if they were hanging off the shoulders. Draw the muscles in the rear position in a similar manner.

The infraspinatus and teres major muscles hang down from the shoulder.



The infraspinatus and teres major muscles start at the shoulder blade and connect.



Hang the muscles off the shoulders.

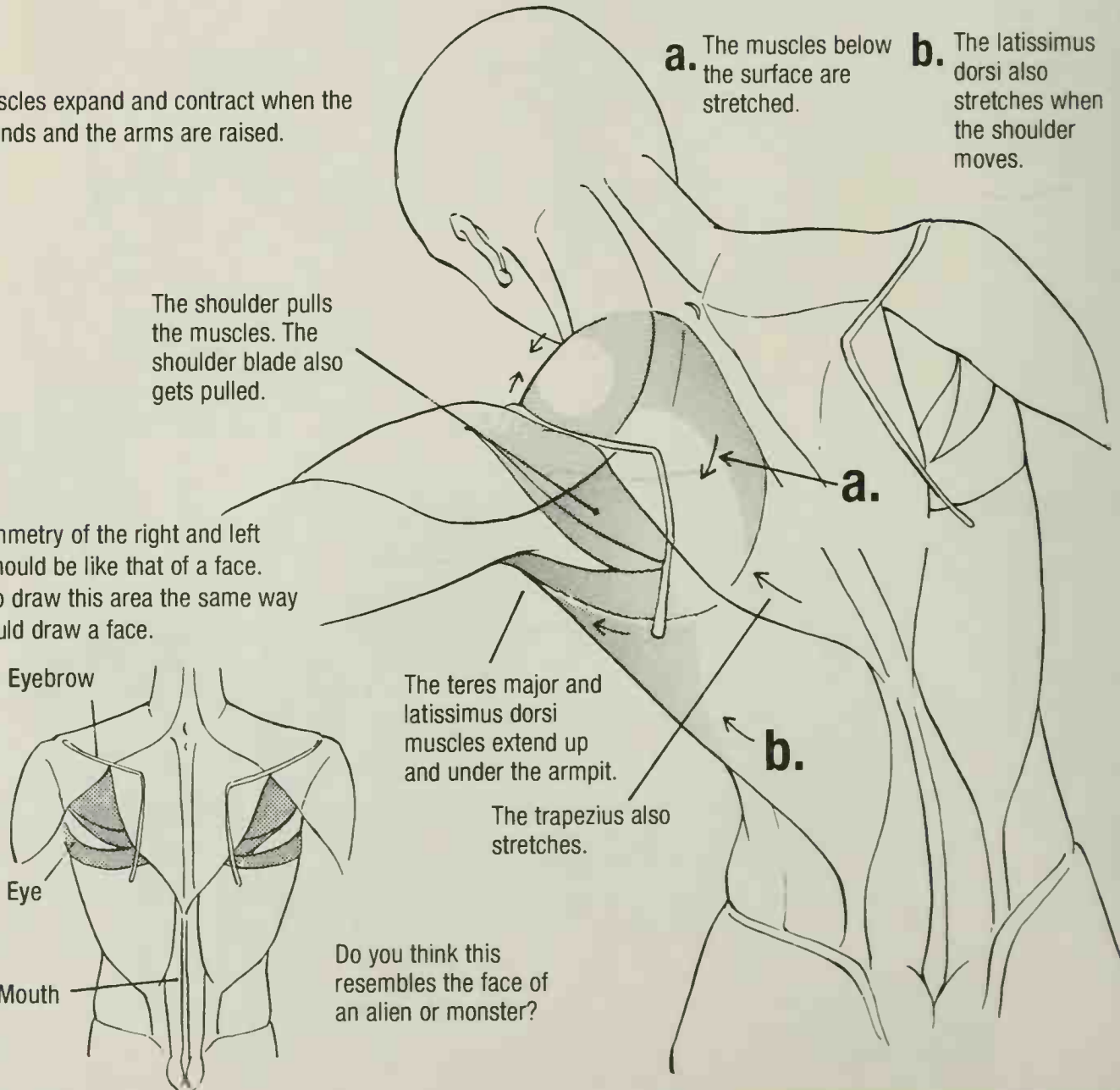
The muscles expand and contract when the body bends and the arms are raised.

a. The muscles below the surface are stretched.

b. The latissimus dorsi also stretches when the shoulder moves.

The shoulder pulls the muscles. The shoulder blade also gets pulled.

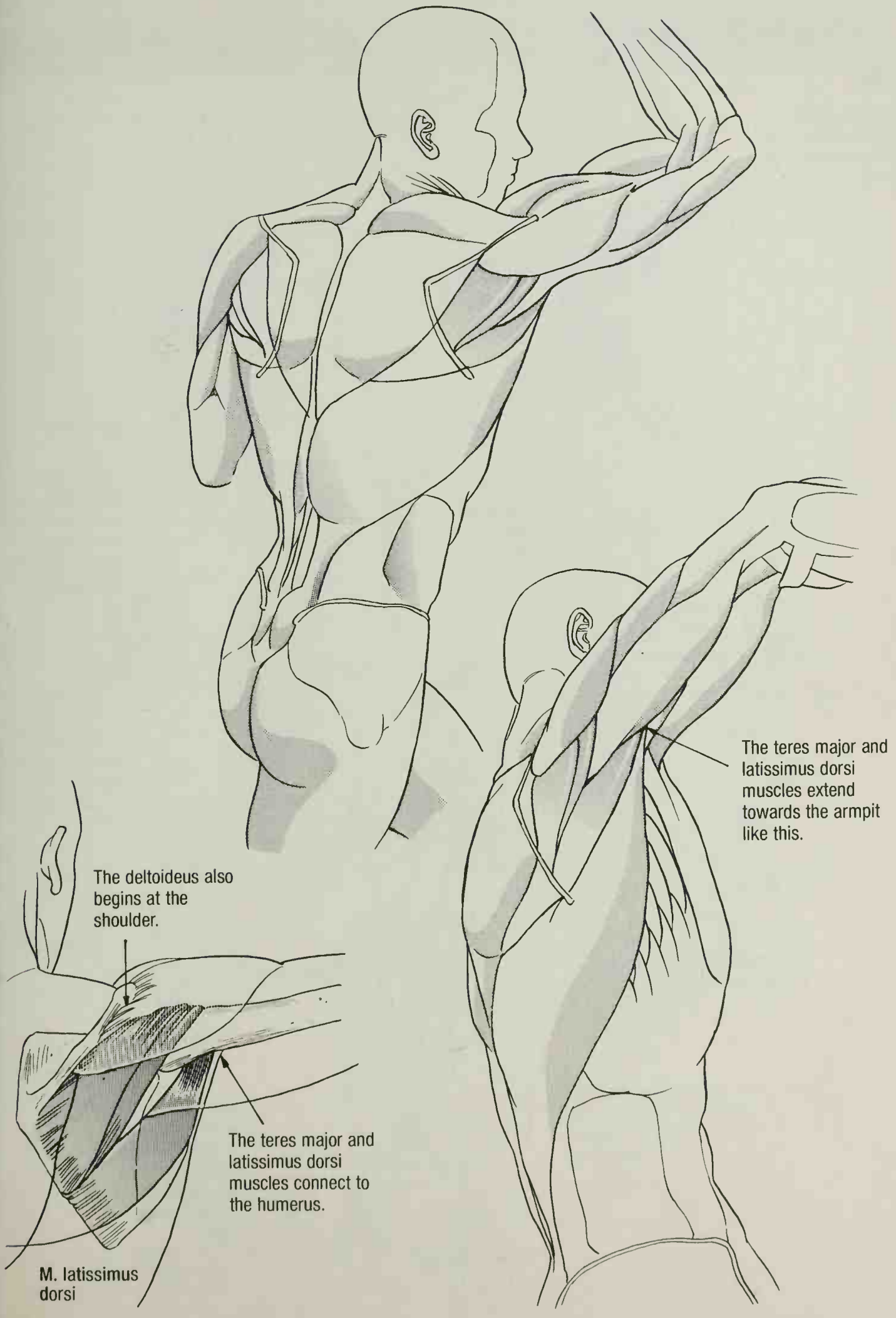
The symmetry of the right and left sides should be like that of a face. Learn to draw this area the same way you would draw a face.



The teres major and latissimus dorsi muscles extend up and under the armpit.

The trapezius also stretches.

Do you think this resembles the face of an alien or monster?

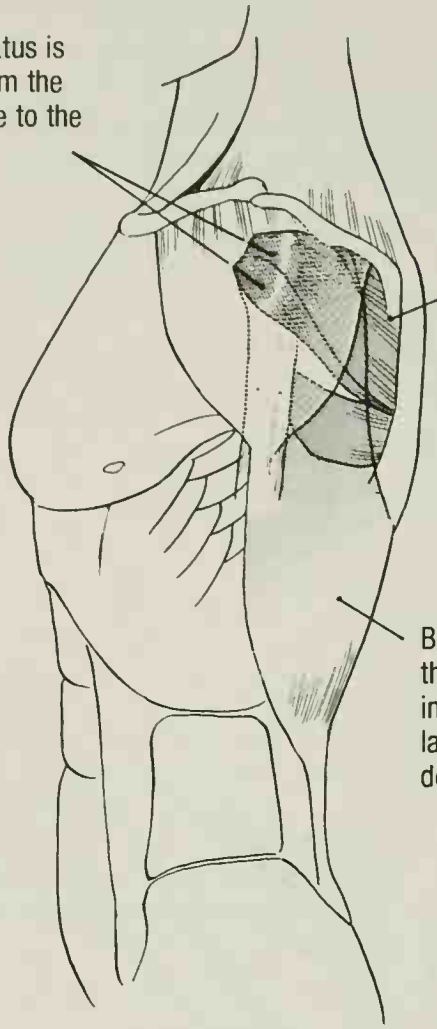

The deltoideus also begins at the shoulder.
The teres major and latissimus dorsi muscles connect to the humerus.
M. latissimus dorsi
The teres major and latissimus dorsi muscles extend towards the armpit like this.

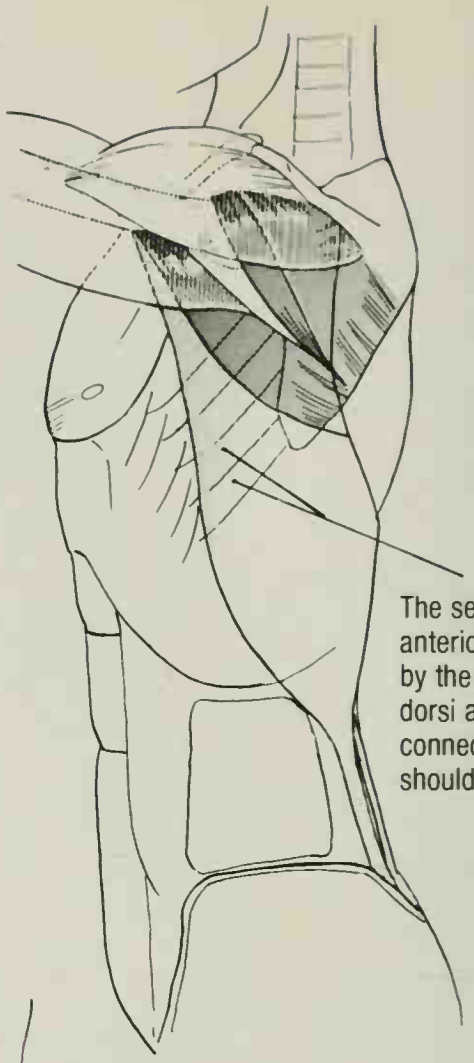
Shoulder Area - Part 2

The infraspinatus is connected from the shoulder blade to the humerus.

Shoulder blade (scapula)

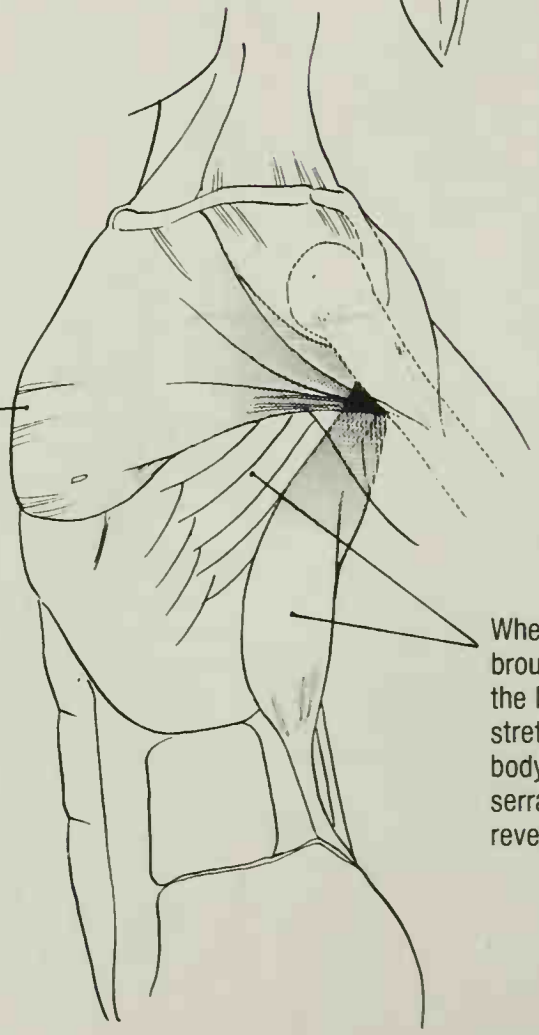
Be careful of the movement in the latissimus dorsi.





The serratus anterioris is hidden by the latissimus dorsi and is connected to the shoulder blade.

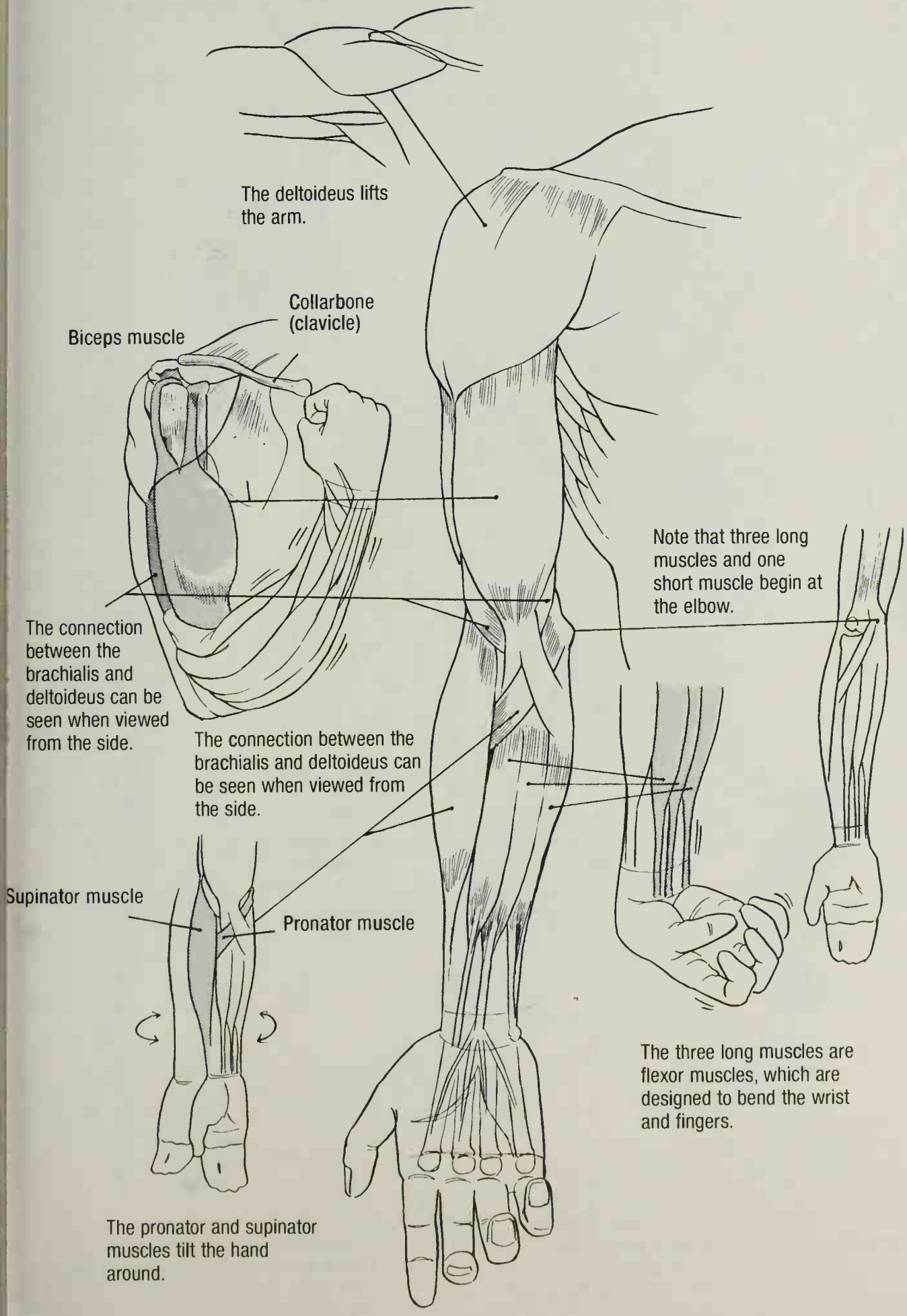
The chest stretches the pectoralis major.



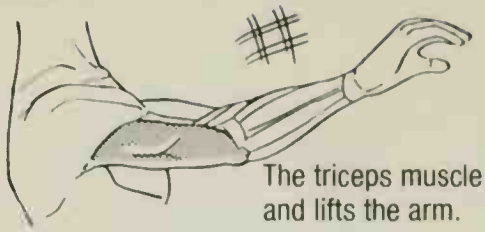
When the arms are brought backward, the latissimus dorsi is stretched behind the body and the hidden serratus anterioris is revealed.

Basic Construction of the Arm

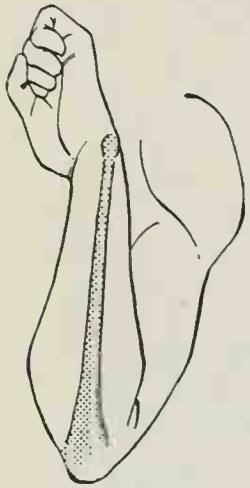
Learn the basic movements of the muscles and their positioning.



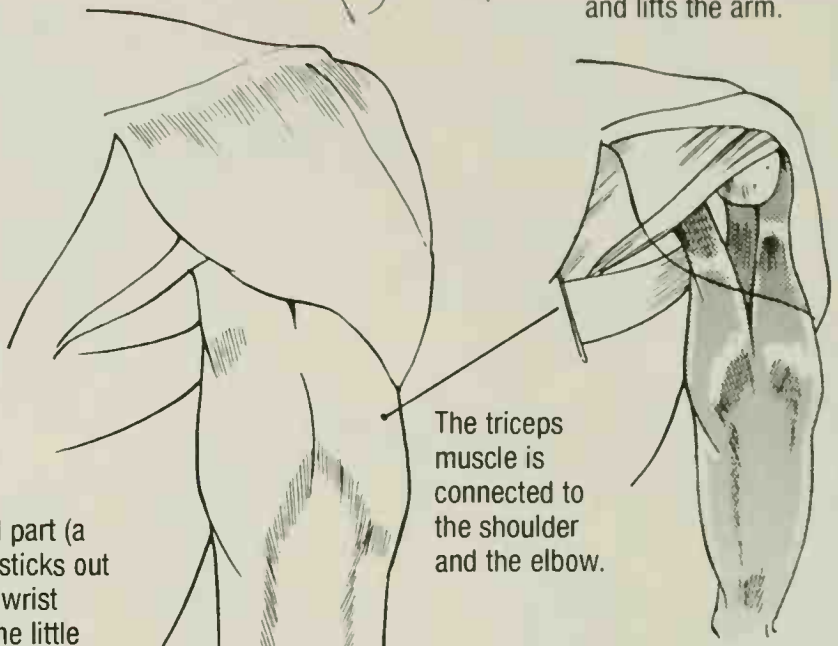
Basic Construction of the Arm - Part 2



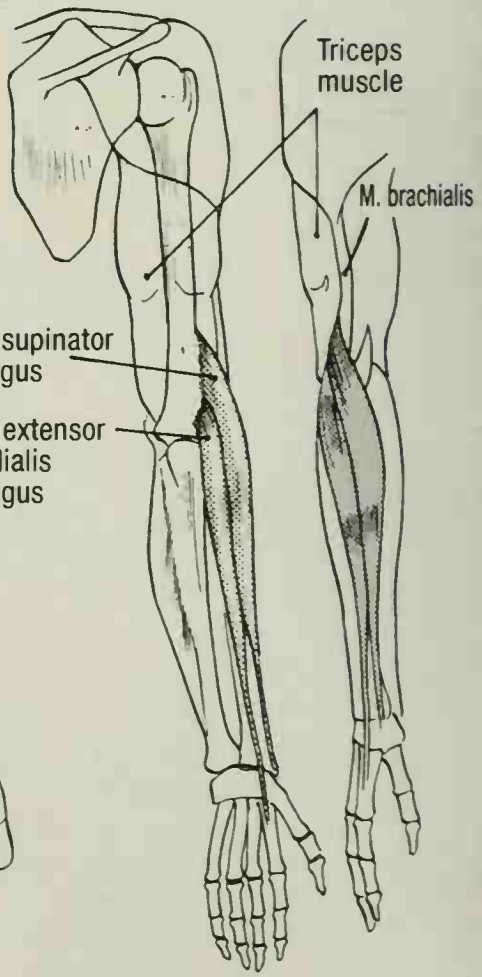
The triceps muscle extends and lifts the arm.



A hard part (a bone) sticks out at the wrist near the little finger. Make this a key element in your drawings.



The triceps muscle is connected to the shoulder and the elbow.



Triceps muscle

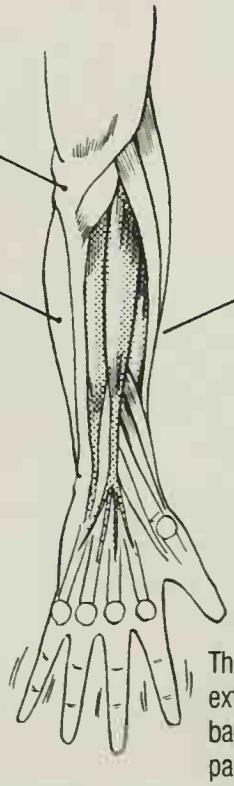
M. brachialis

M. supinator longus

M. extensor radialis longus

Elbow

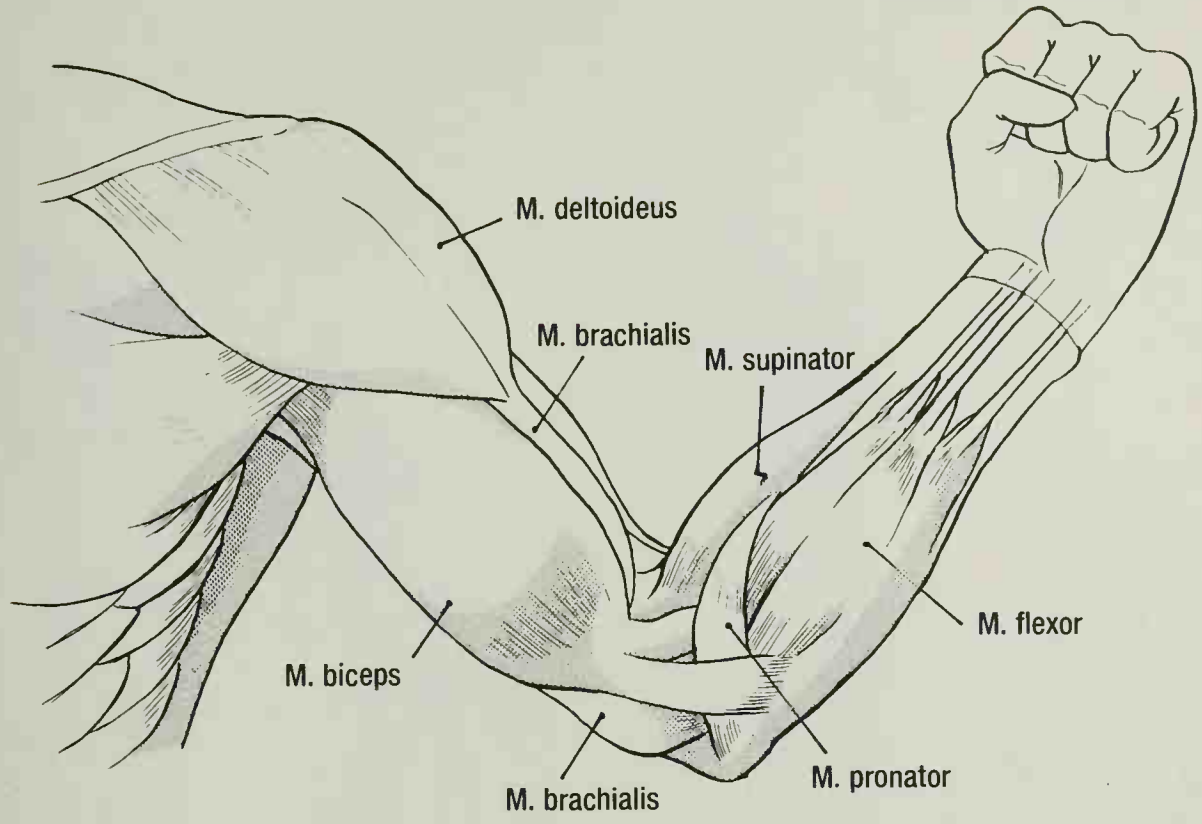
Flexor muscles on the side of the back of the hand.

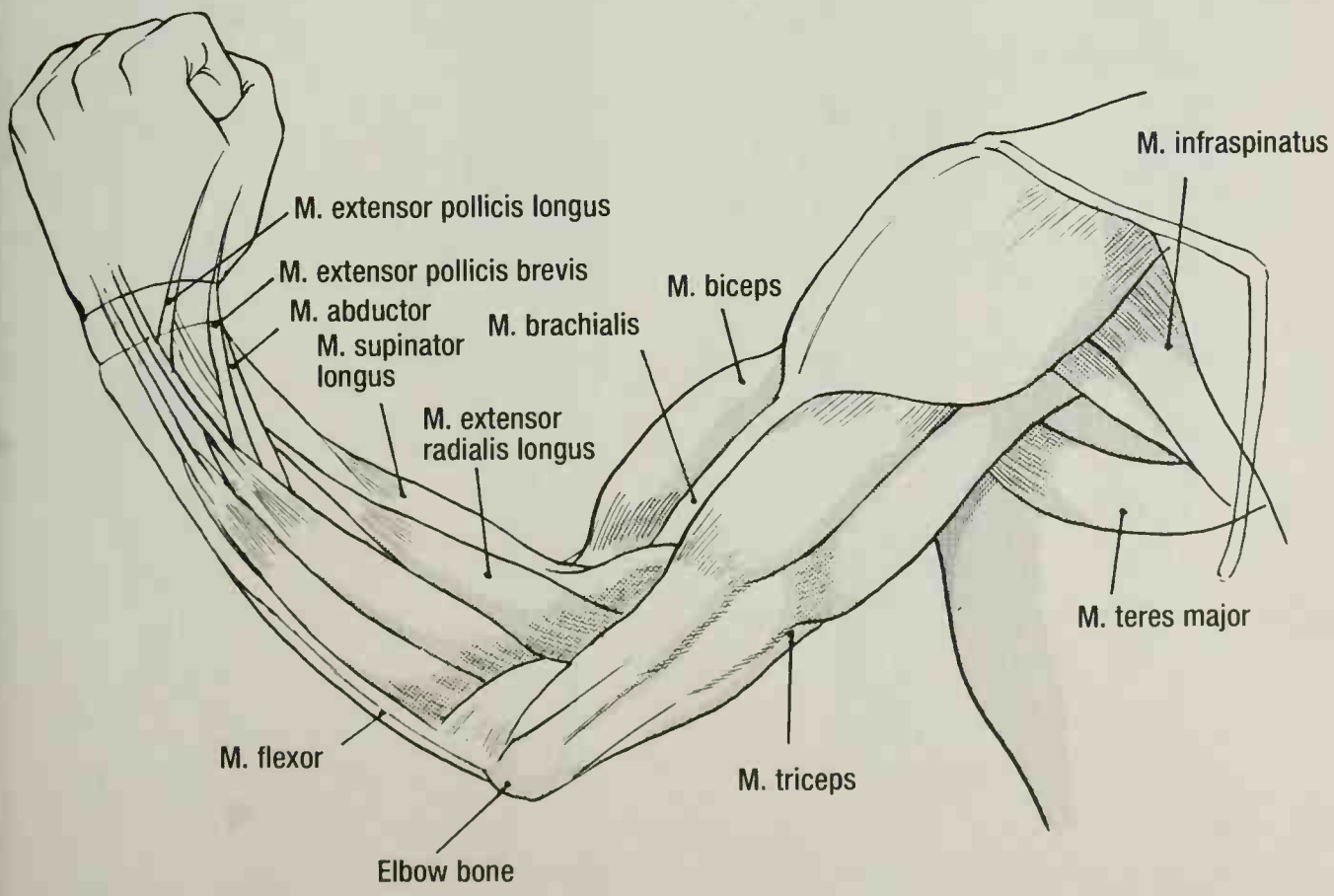


Used for extending the wrist and fingers.

There are also three extensor muscles on the back of the hand like in the palm of the hand. These are designed to open the hand and work in conjunction with the flexor muscles.

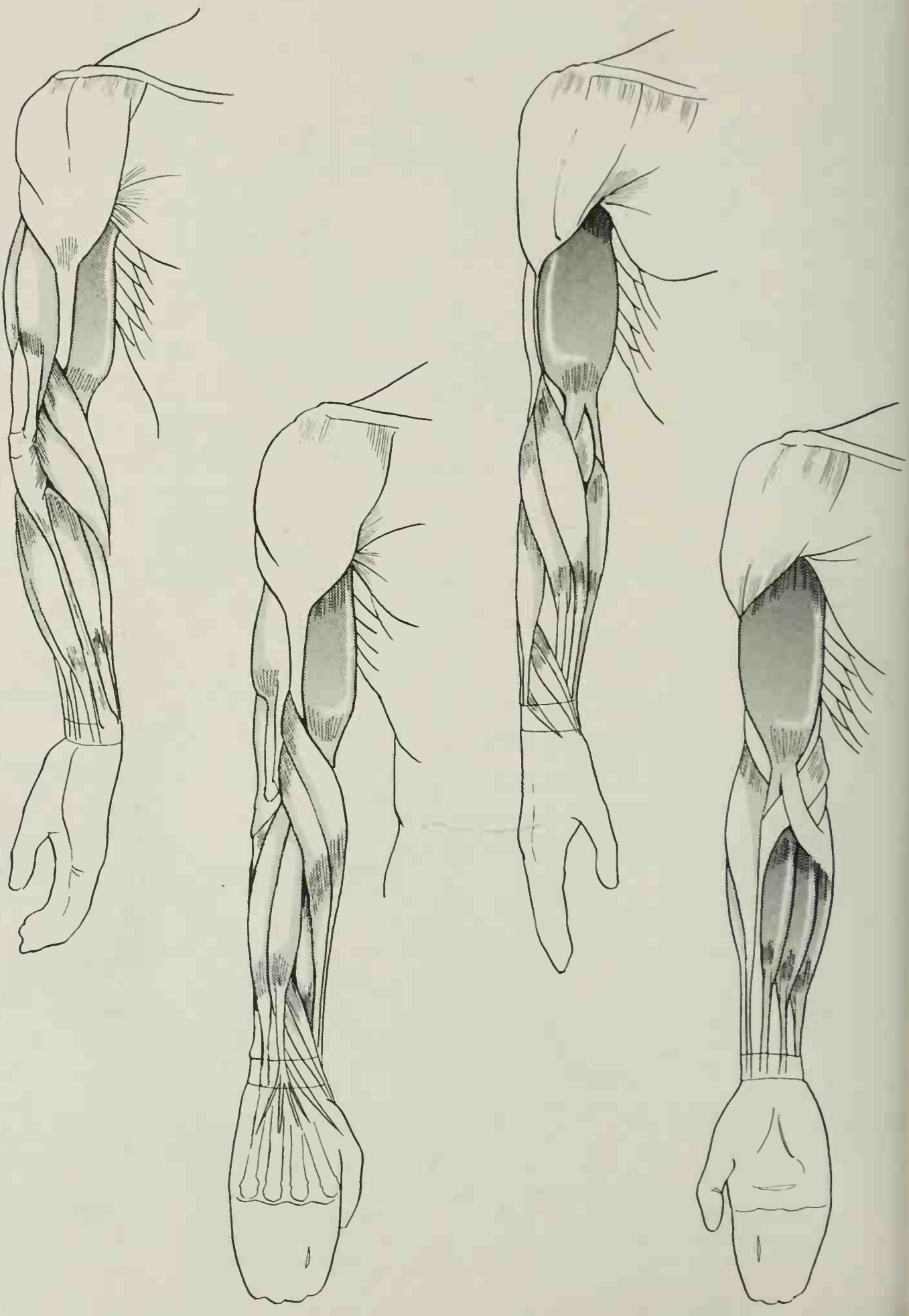
The supinator longus and extensor radialis longus muscle connected to the index finger come out between the triceps and brachialis.

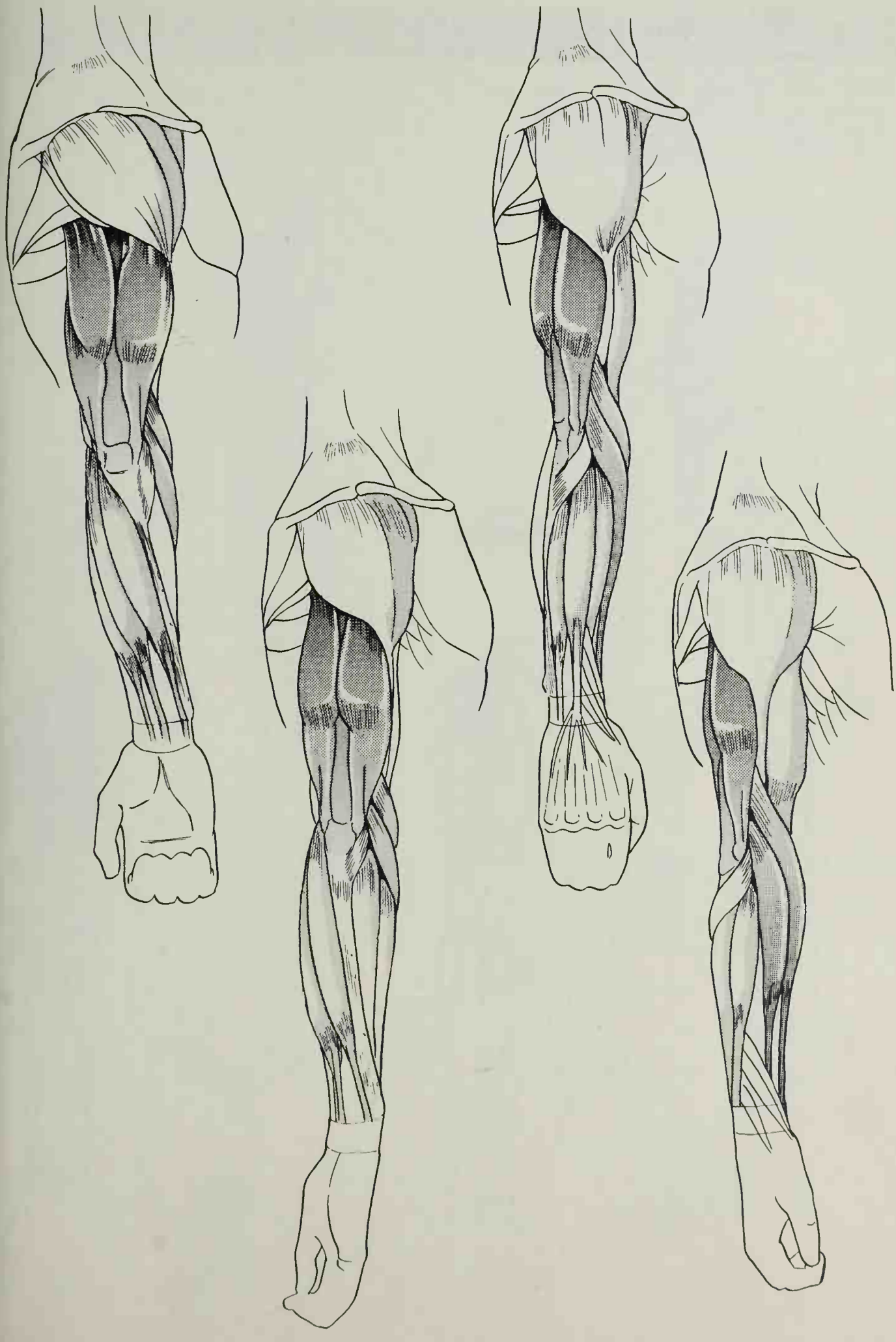

M. deltoideus
M. brachialis
M. supinator
M. flexor
M. biceps
M. brachialis
M. pronator


M. infraspinatus
M. extensor pollicis longus
M. extensor pollicis brevis
M. abductor
M. supinator longus
M. brachialis
M. biceps
M. extensor radialis longus
M. teres major
M. flexor
M. triceps
Elbow bone

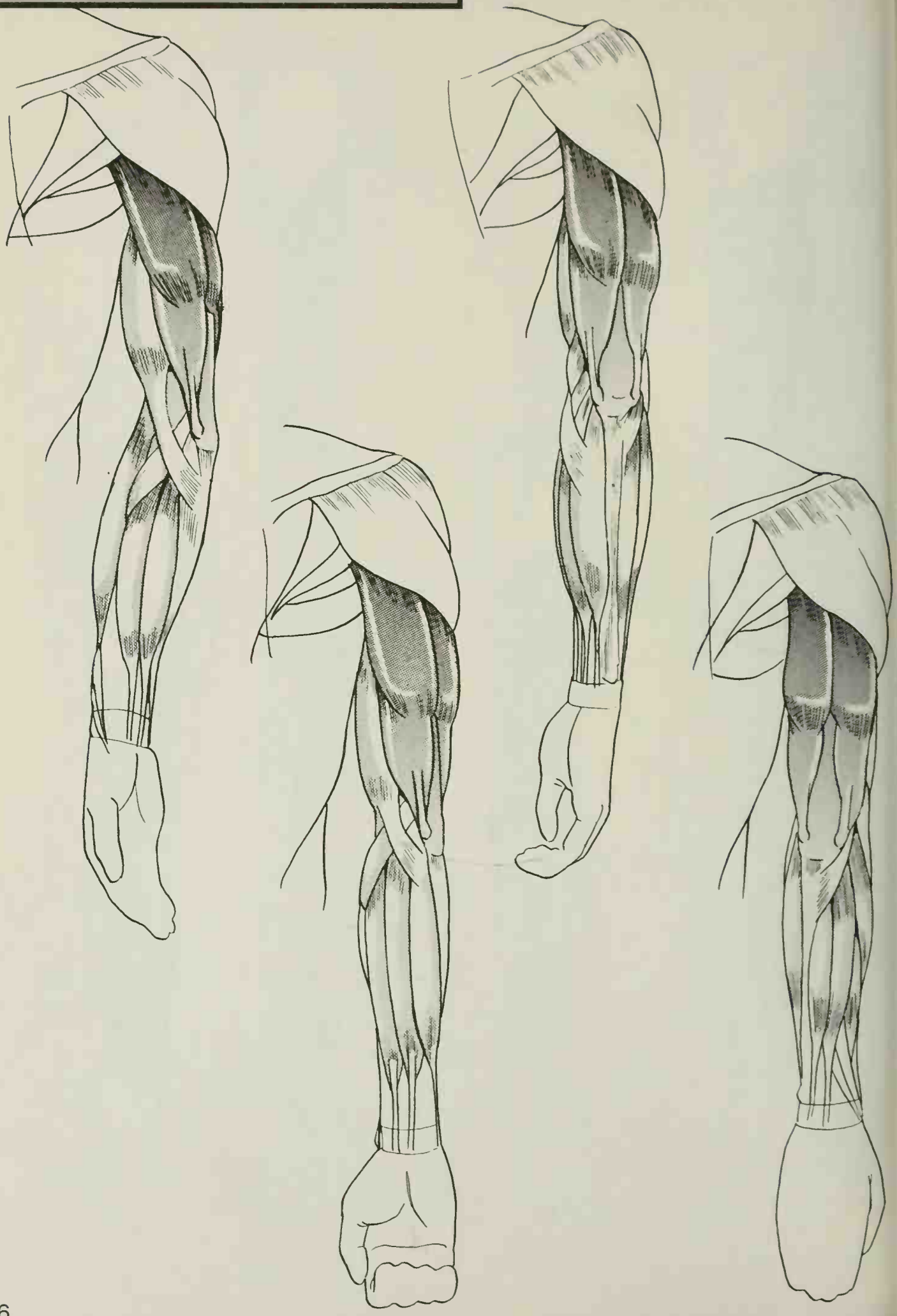
Variations in Twisting the Arm

Take a look at the changes in the muscles using the first drawing as benchmark.



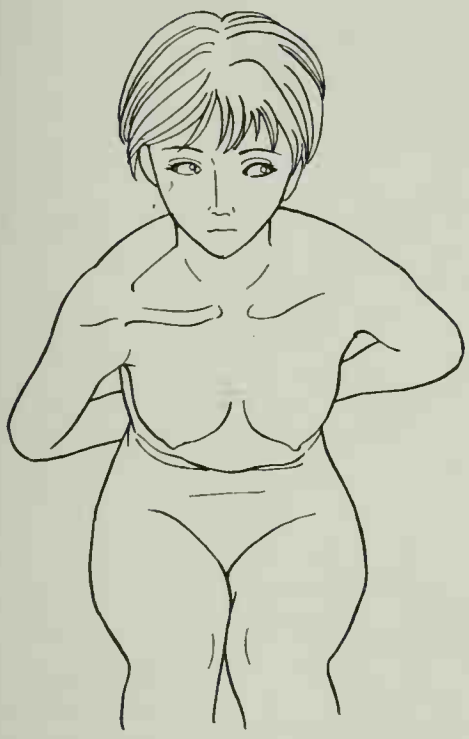


Variations in Twisting the Arm - Part 2

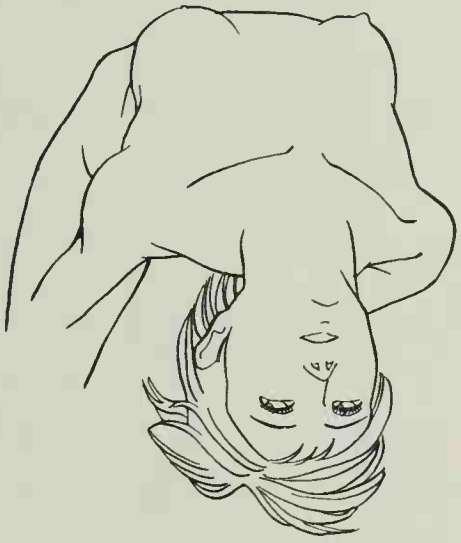


Forward and Backward Shoulder Movement

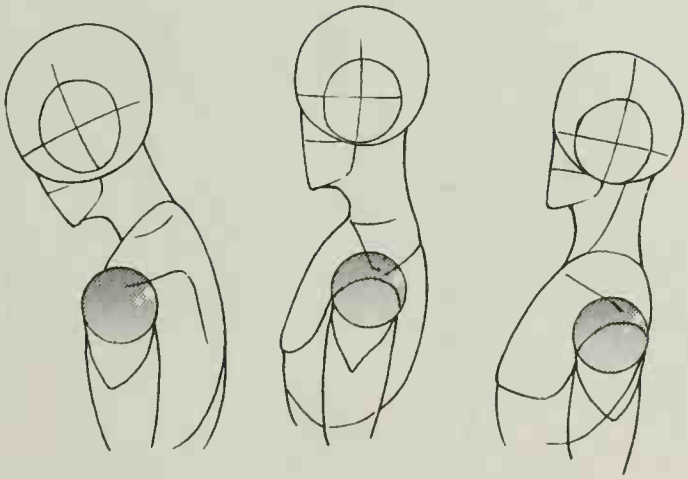
The shoulders move to the front and back depending on the pose. When the shoulders are stretched, the chest expands and the shoulders move closer together in the back. When the back is rounded, the chest contracts and the shoulders move towards the front.

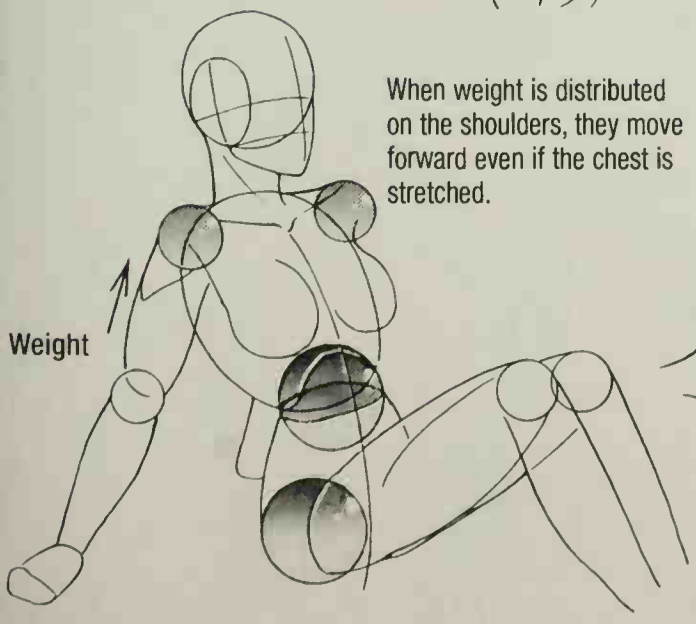


When the back is rounded, the chest contracts and the shoulders move forward.

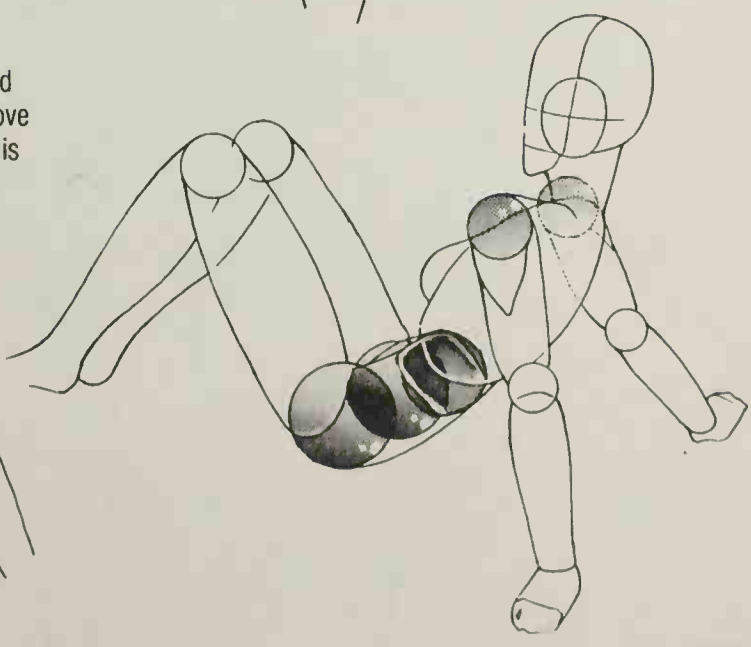


The shoulders move to the back when the chest expands.



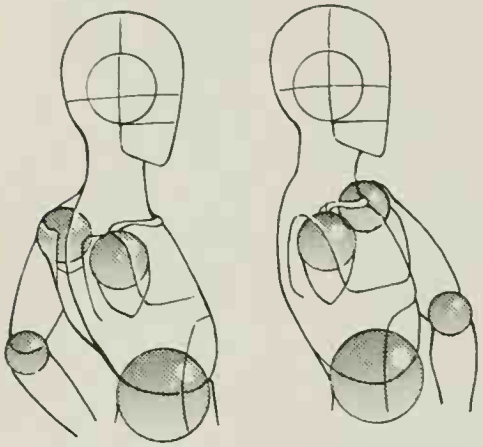


When weight is distributed on the shoulders, they move forward even if the chest is stretched.

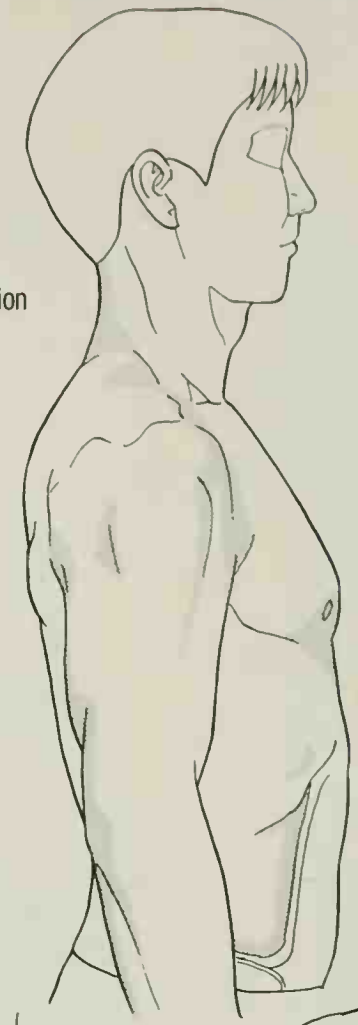


Forward and Backward Arm Motion Variations

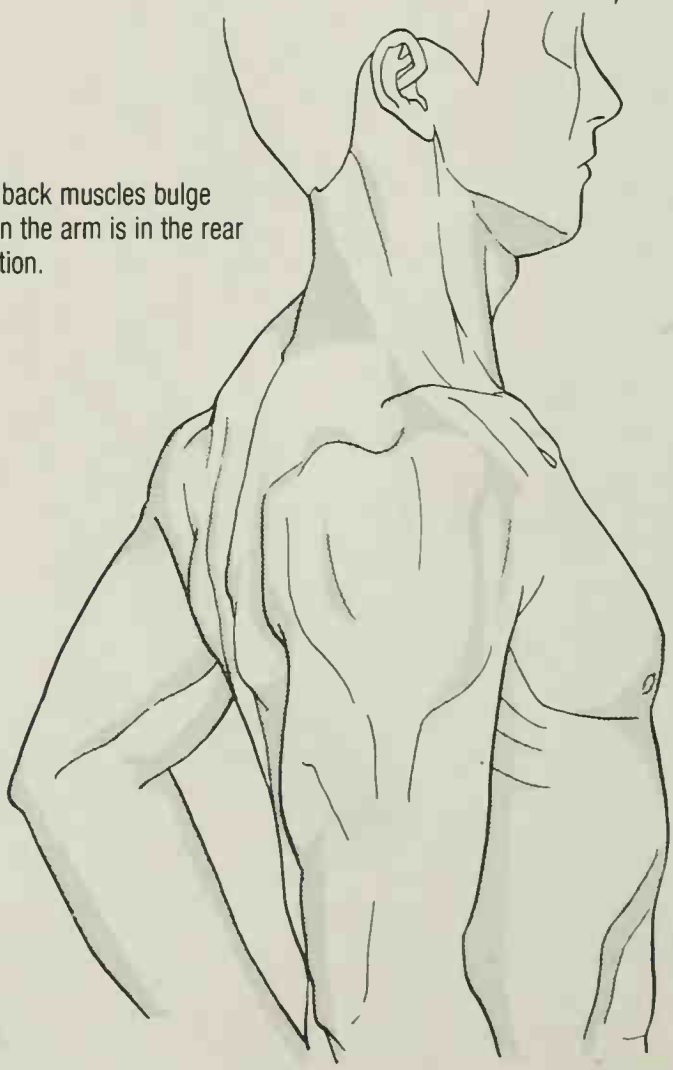
While the pectoralis major and back muscles don't change much when the arm is moved forward and backward, there is a slight change in how the muscles are stretched.



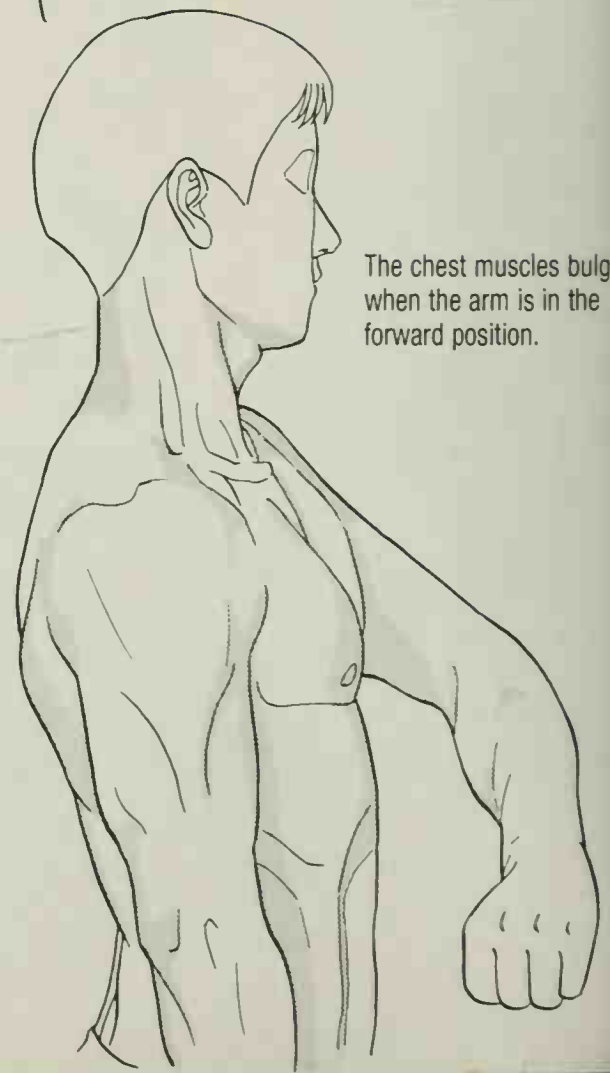
Normal position



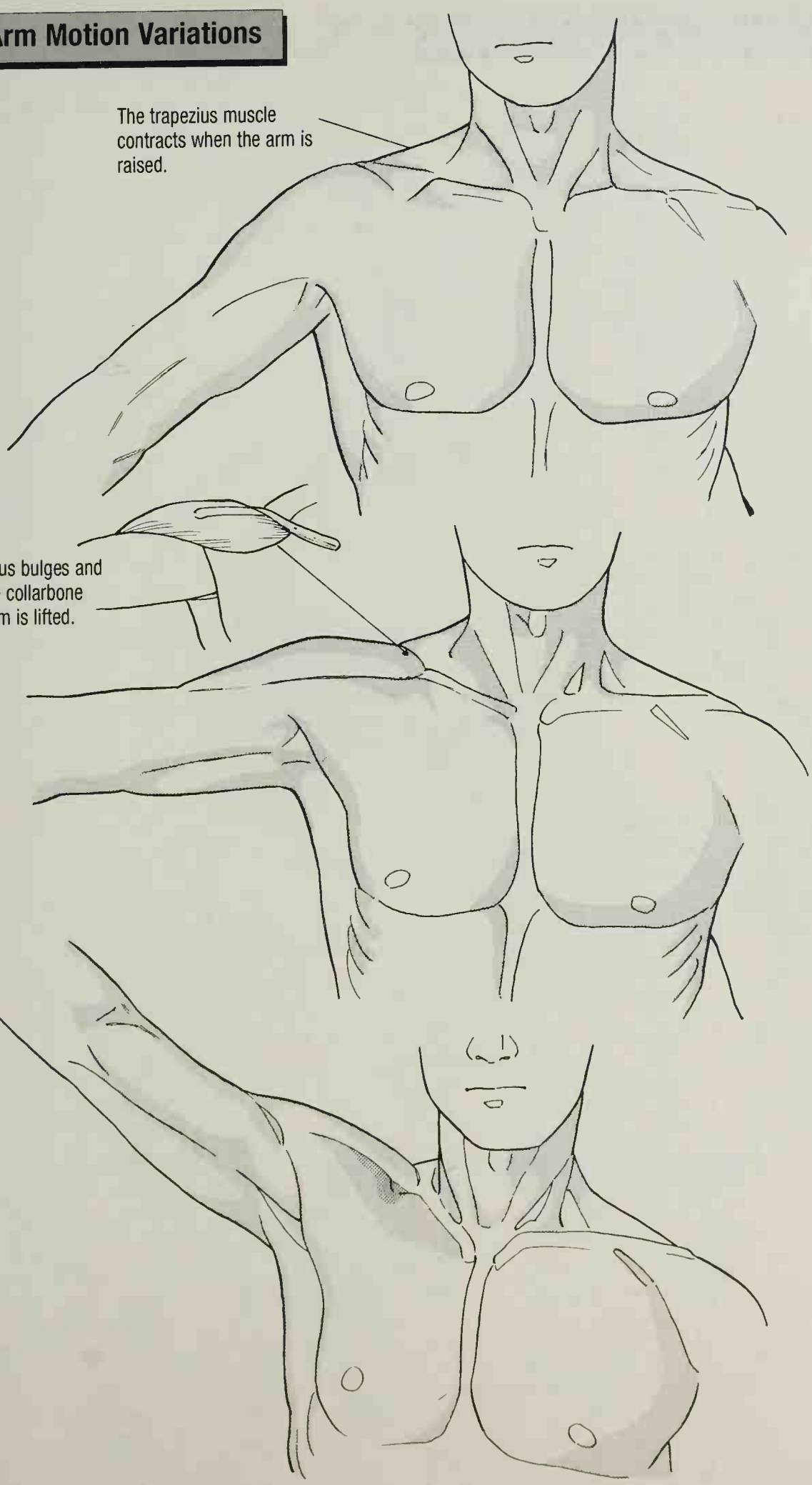
The back muscles bulge when the arm is in the rear position.



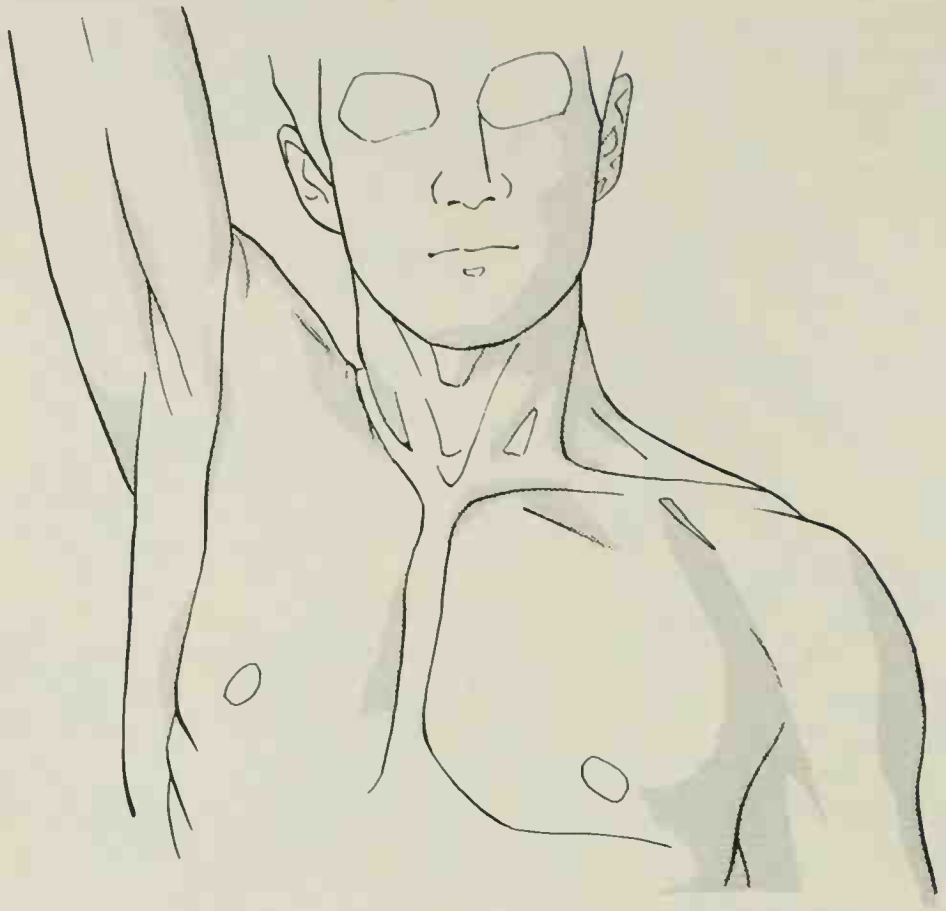
The chest muscles bulge when the arm is in the forward position.



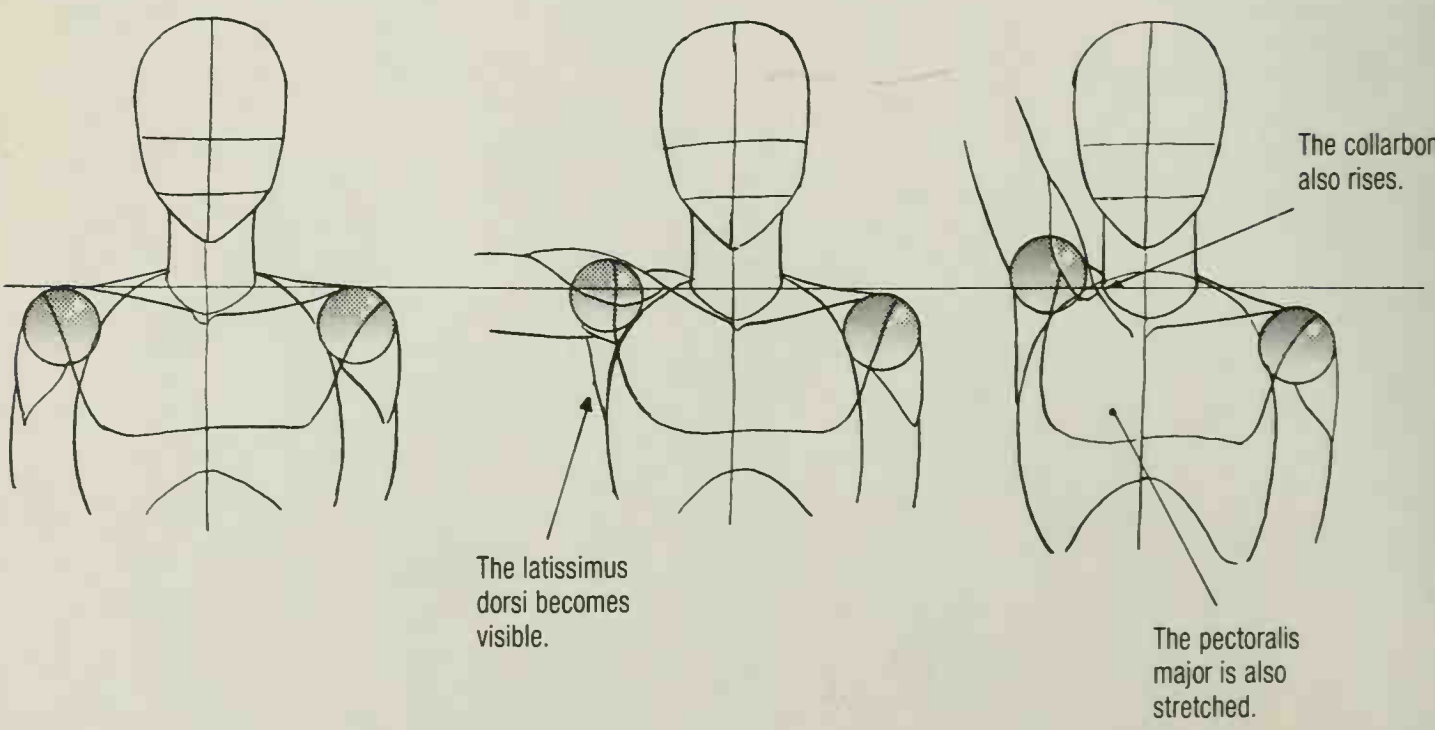
Side Arm Motion Variations

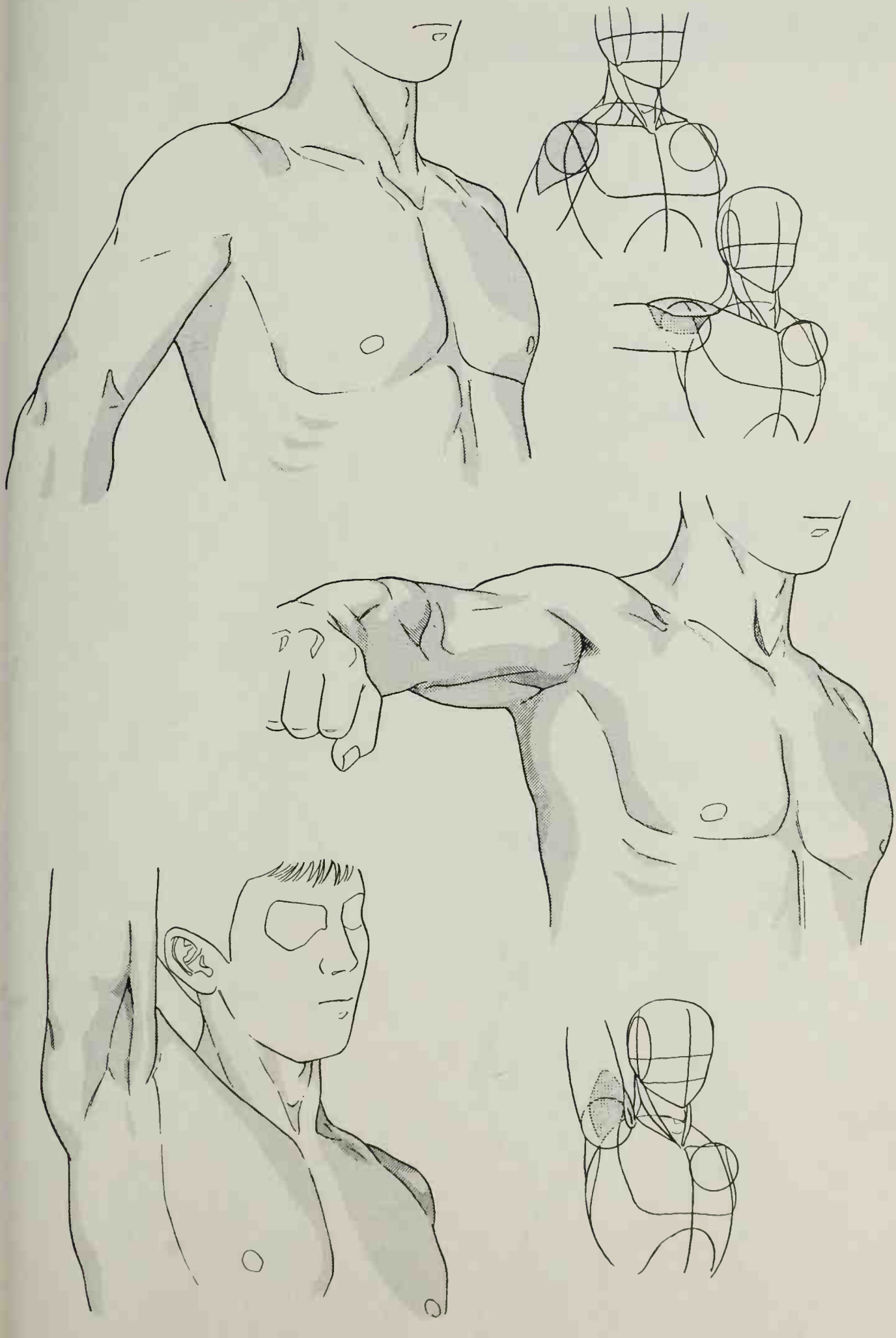


Side Arm Motion Variations - Part 2

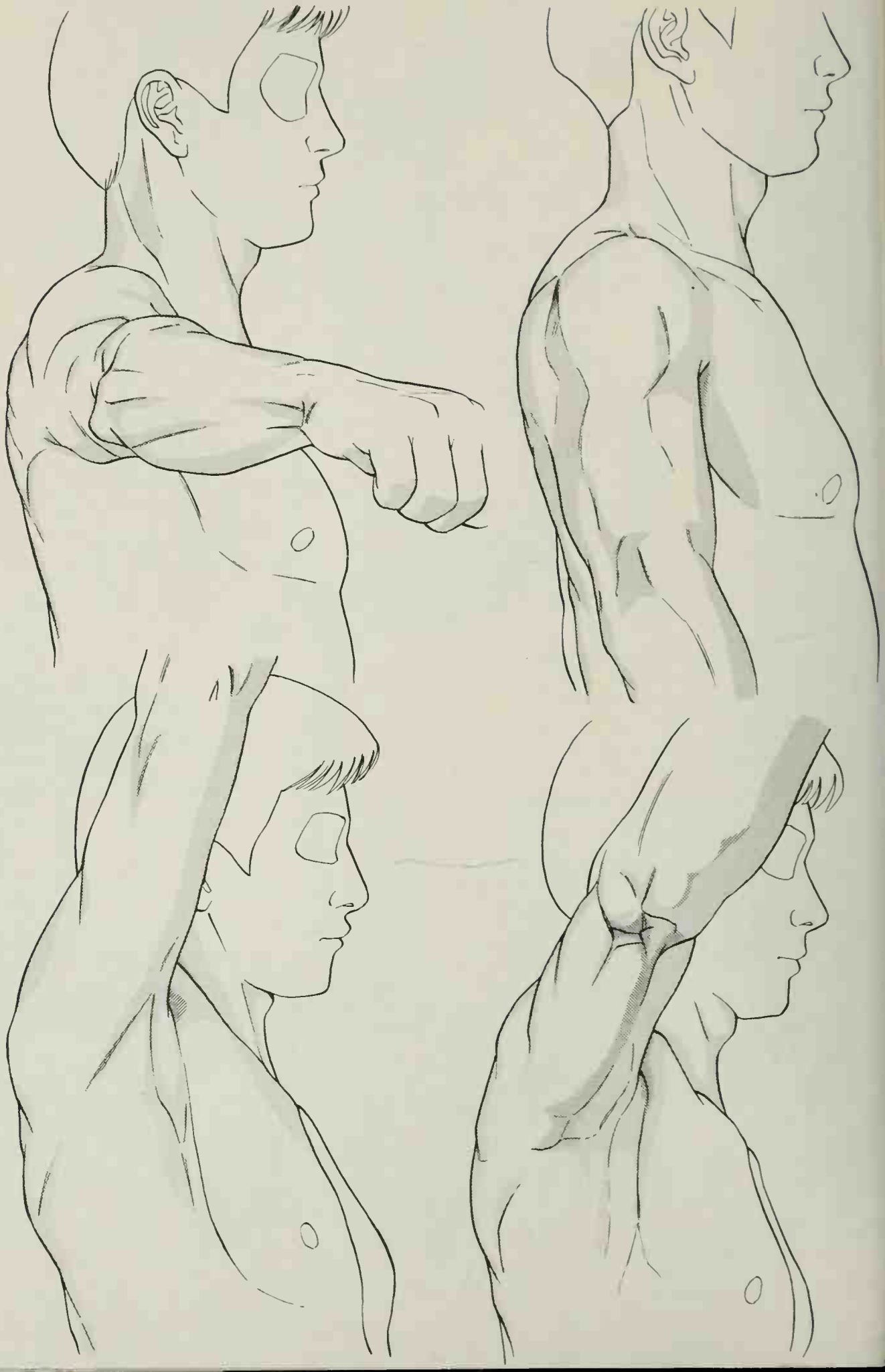


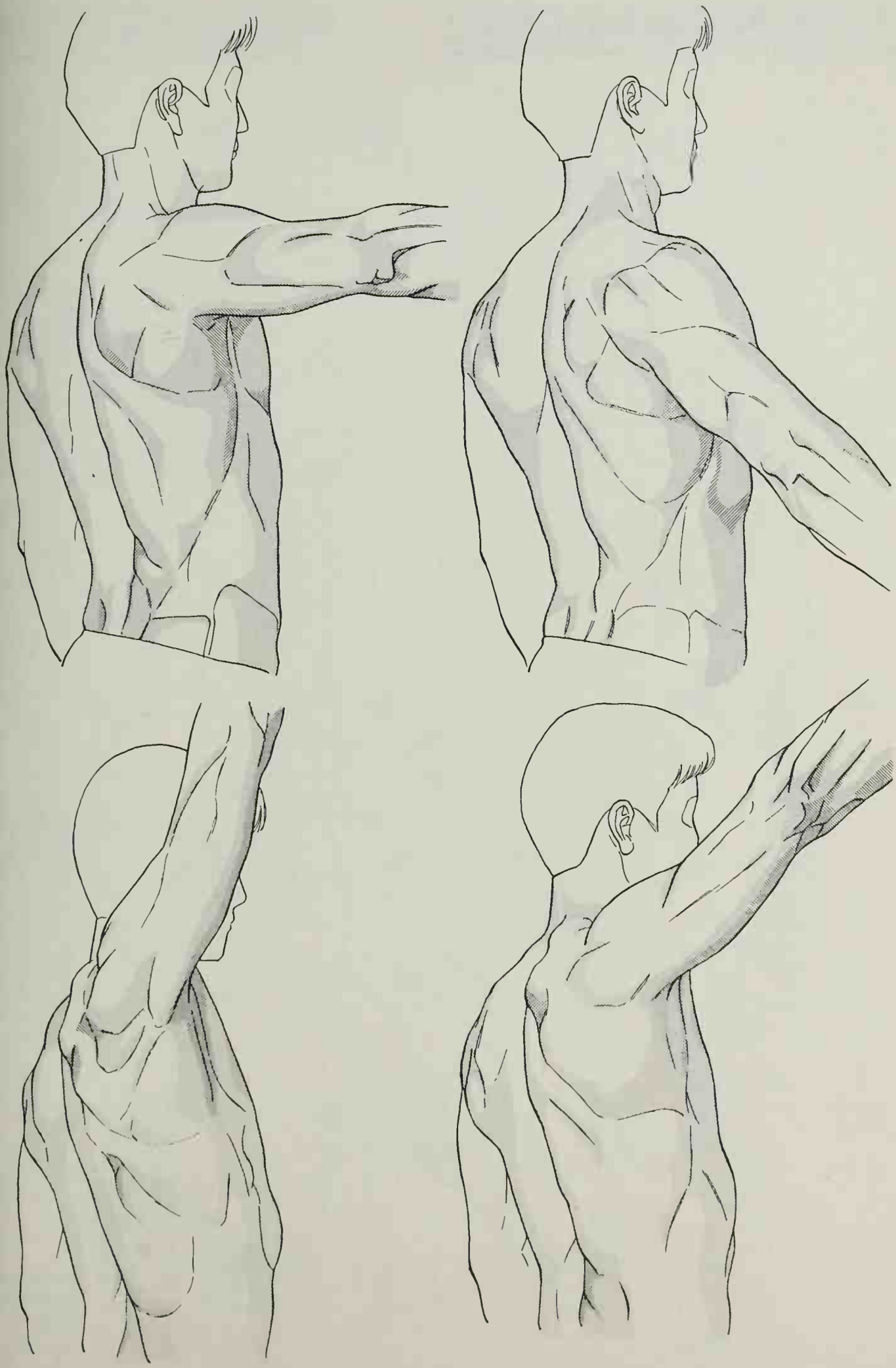
The collarbone rises and the latissimus dorsi contracts when the shoulder is raised.



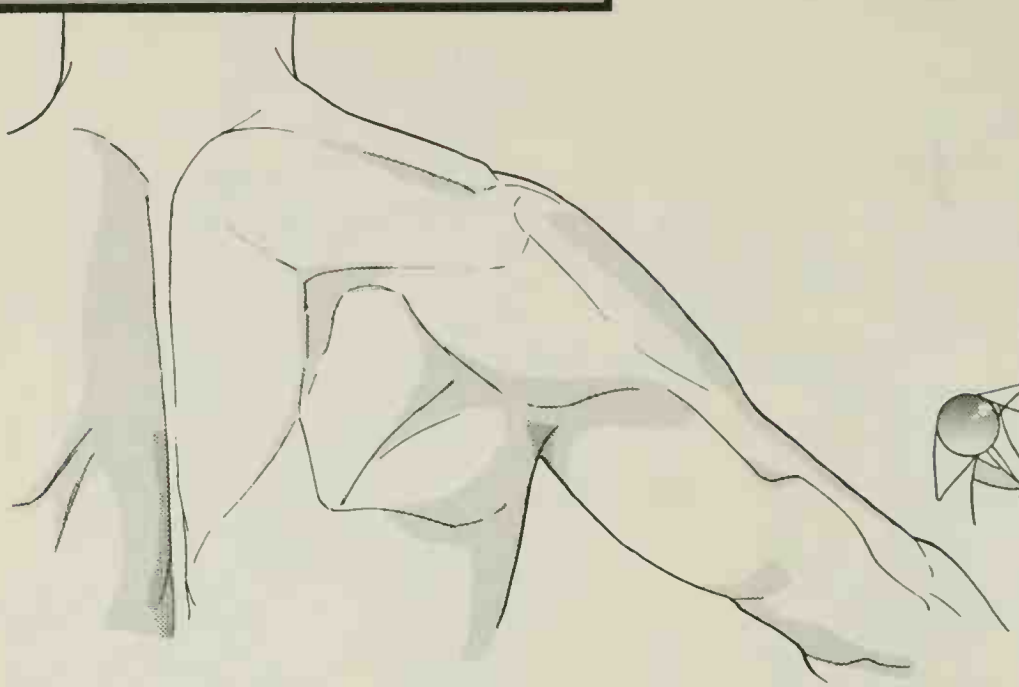


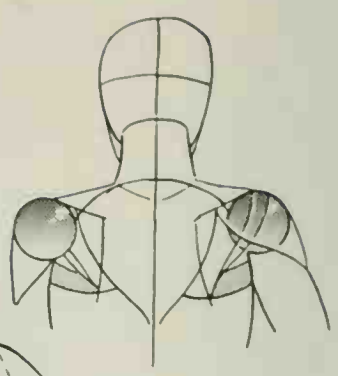
Side Arm Motion Variations - Part 3

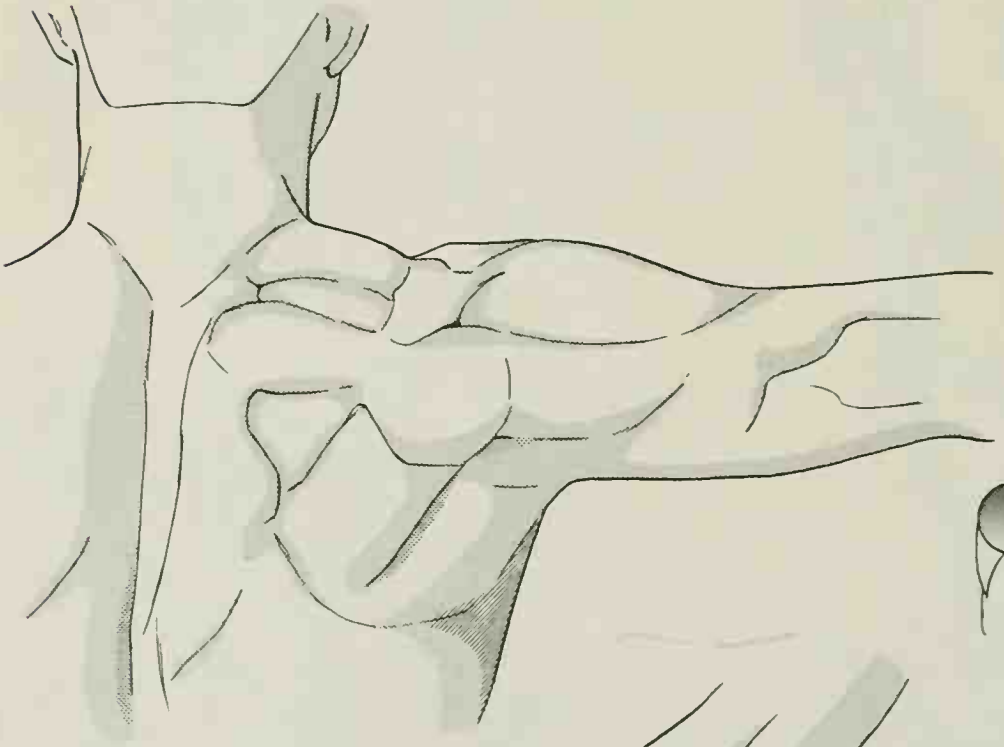


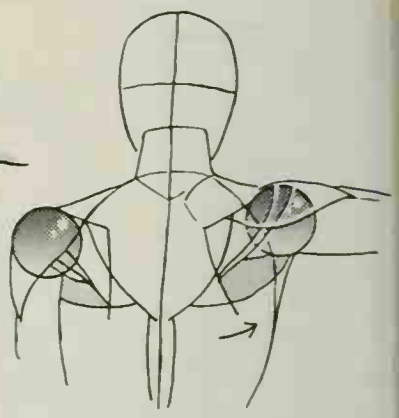


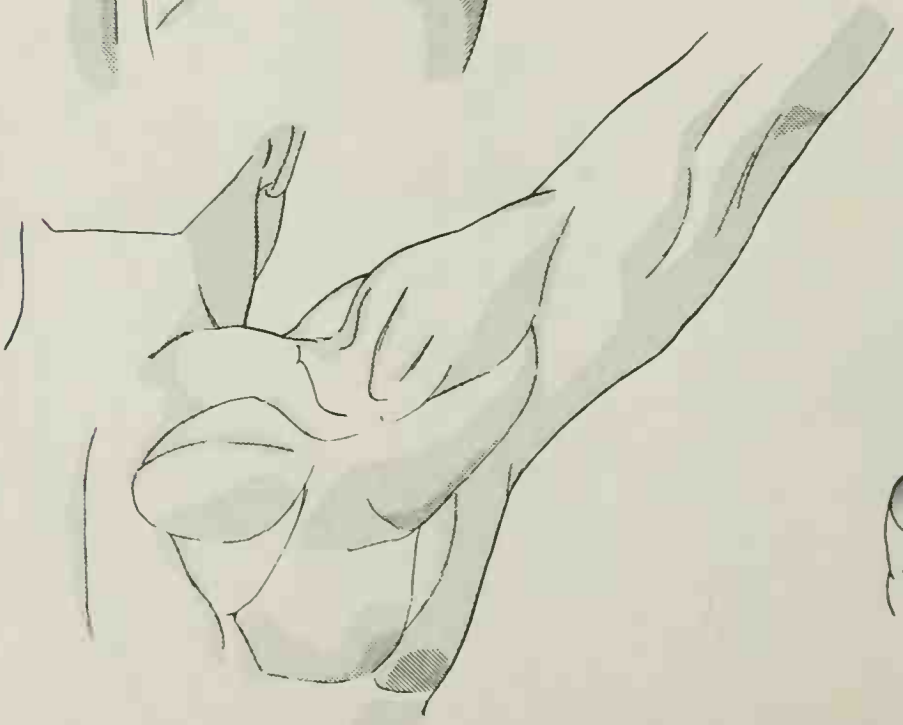
Side Arm Motion Variations - Part 4

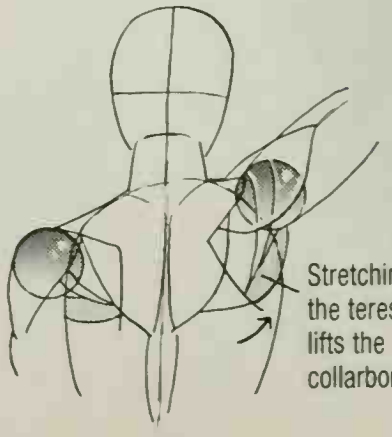








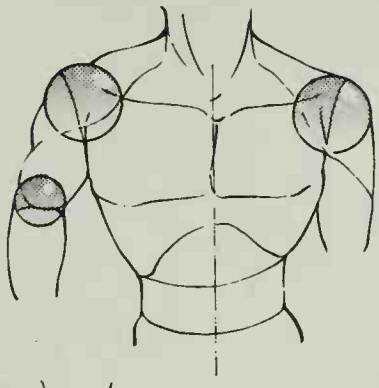


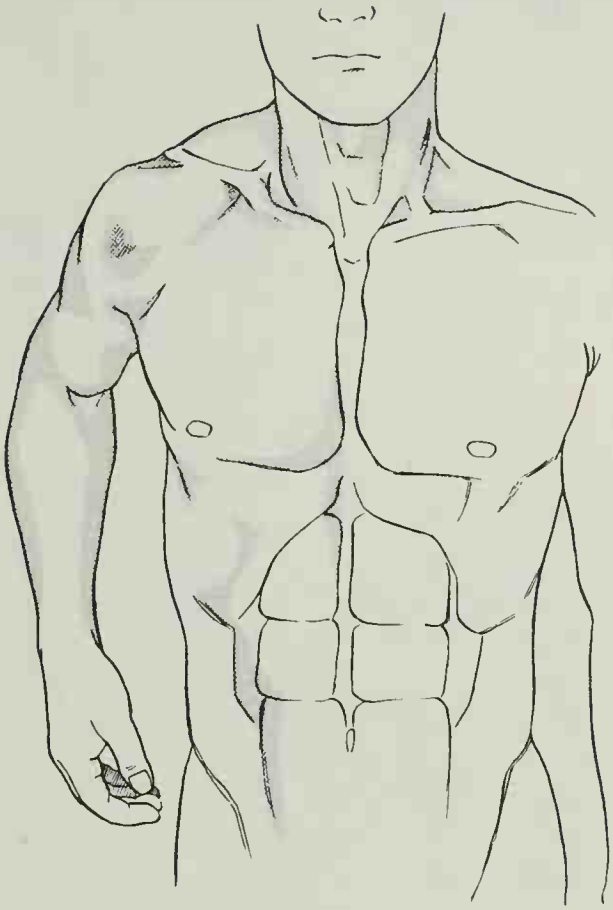


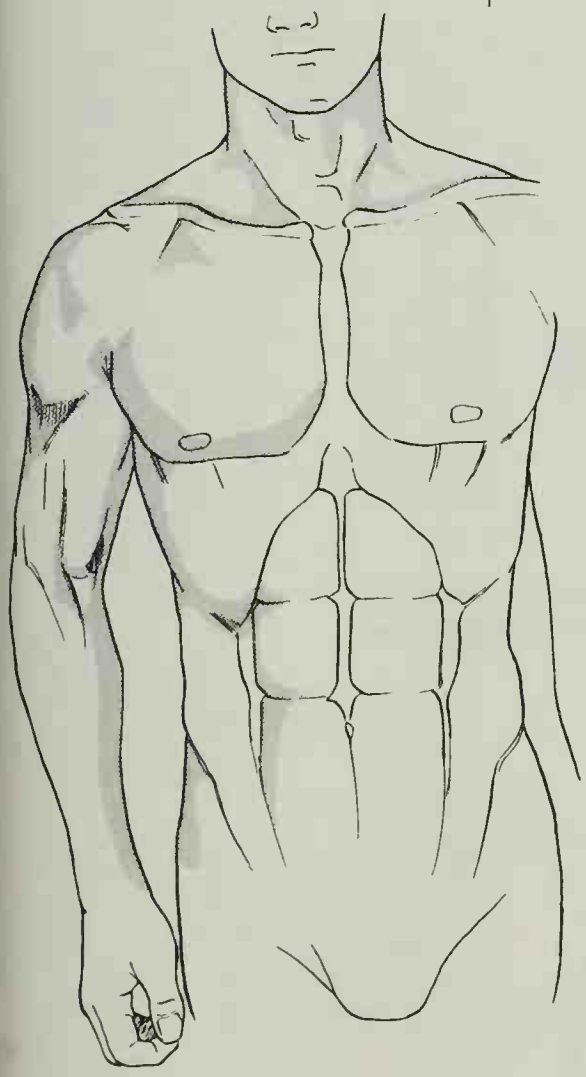
Stretching in the teres major lifts the collarbone.

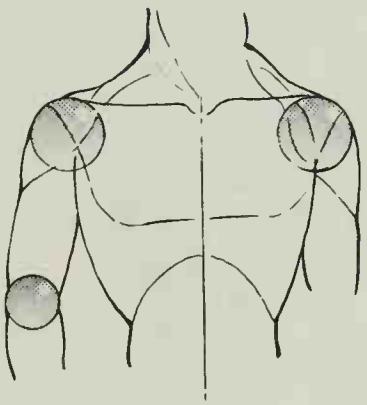
Front Arm Motion Variations

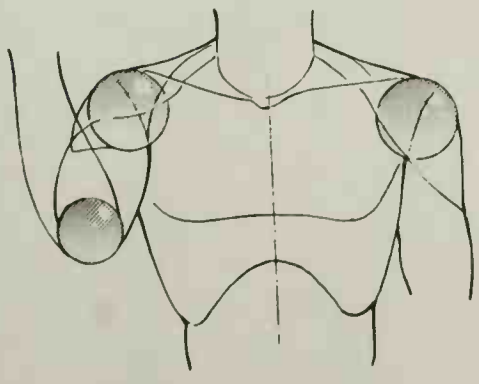
Check to make sure that changes occur in the deltoideus of the shoulder when the arm is raised.



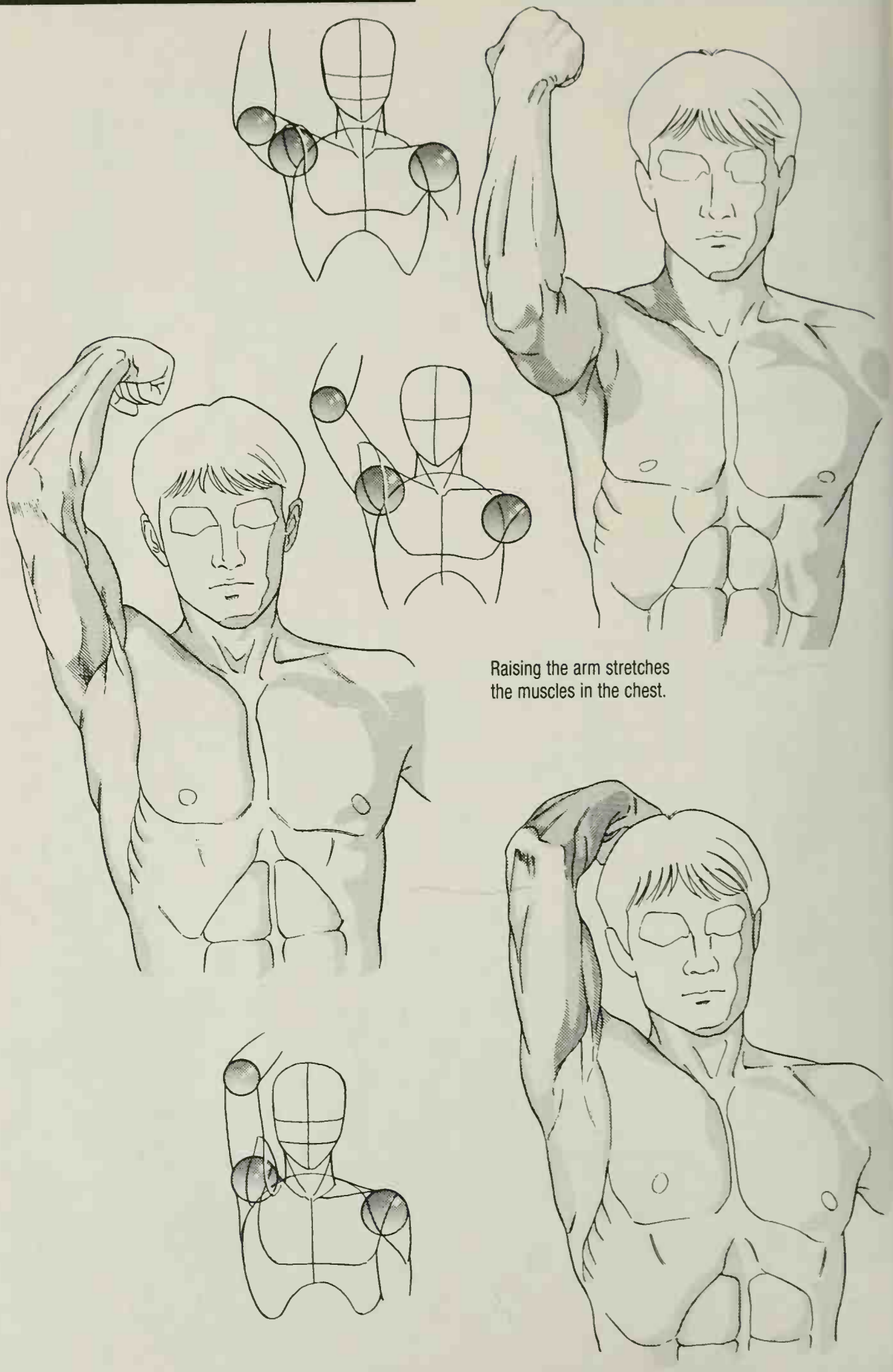




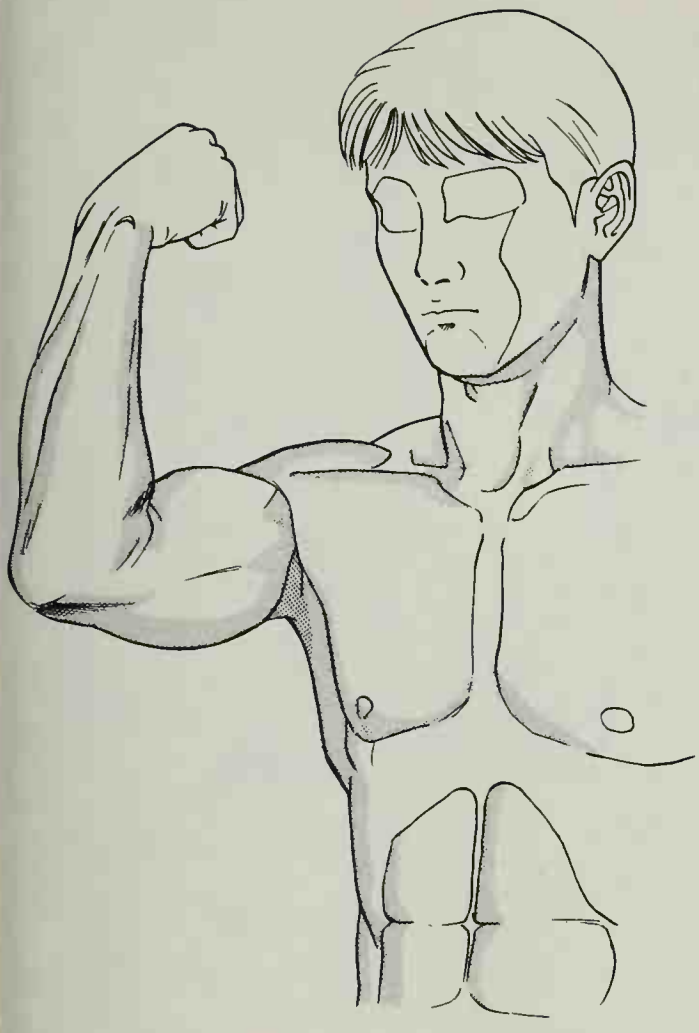


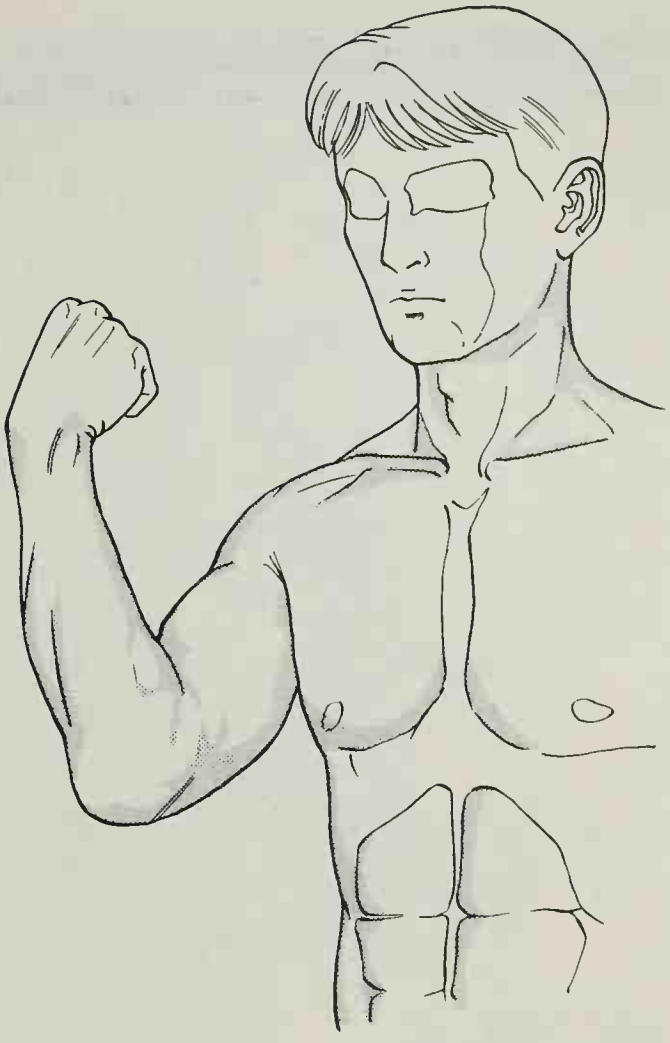


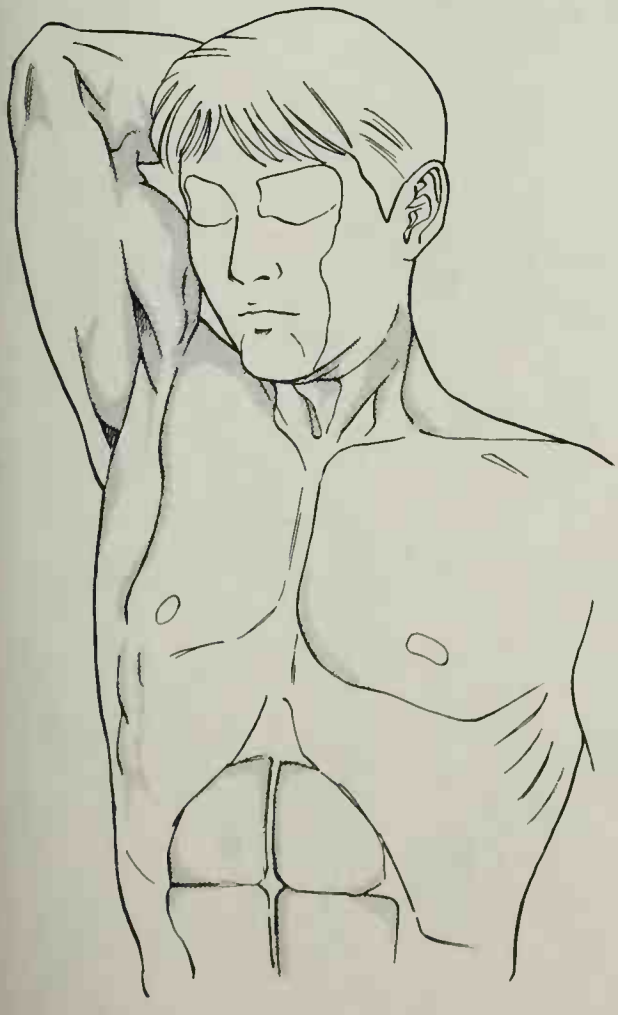
Front Arm Motion Variations - Part 2

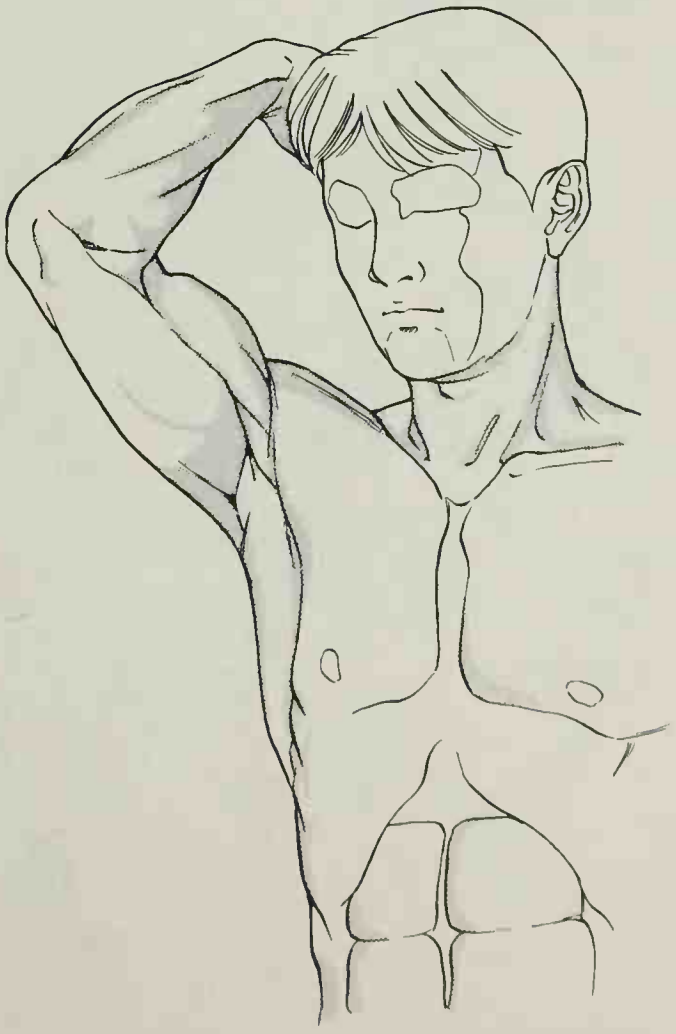


Raising the arm stretches the muscles in the chest.

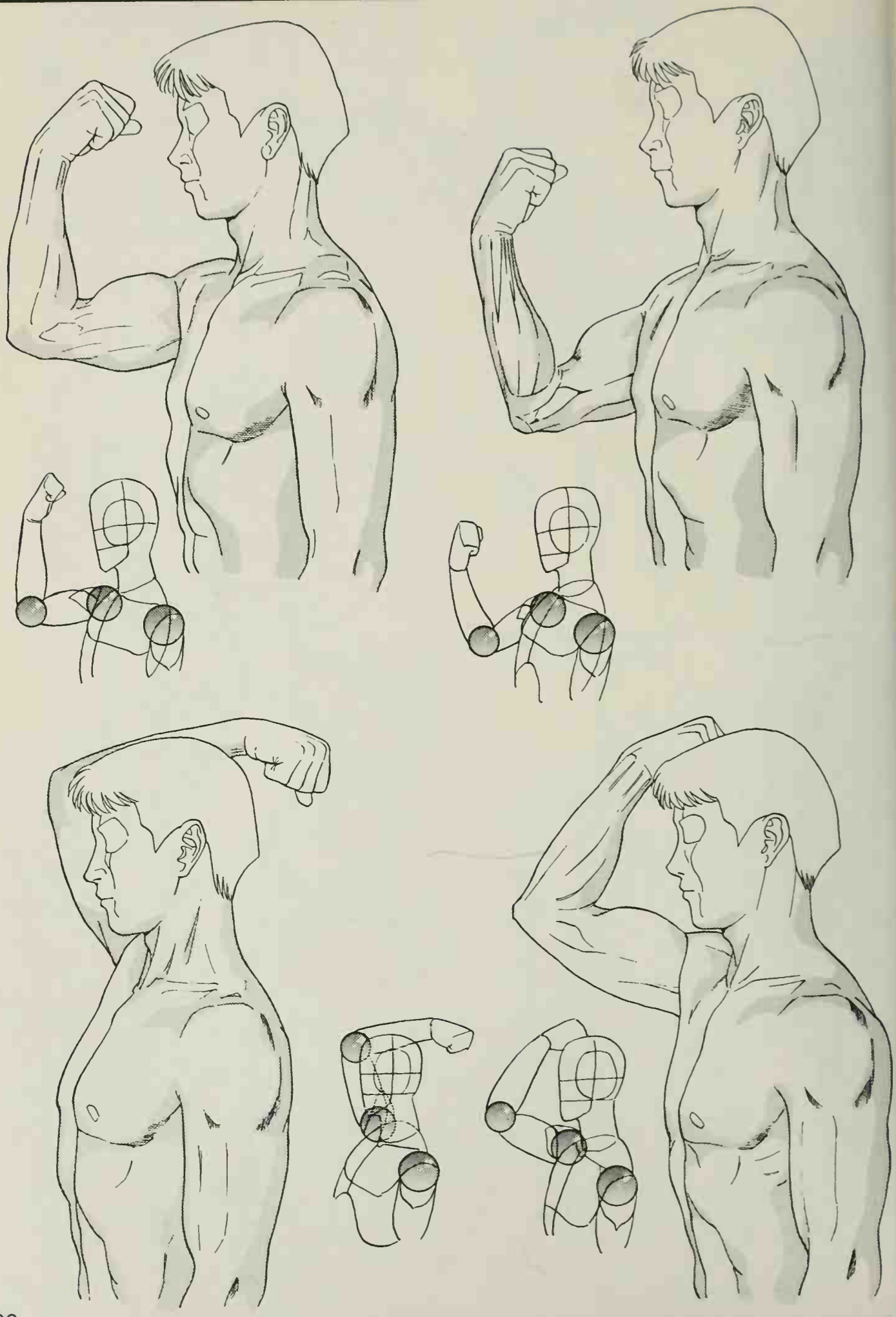


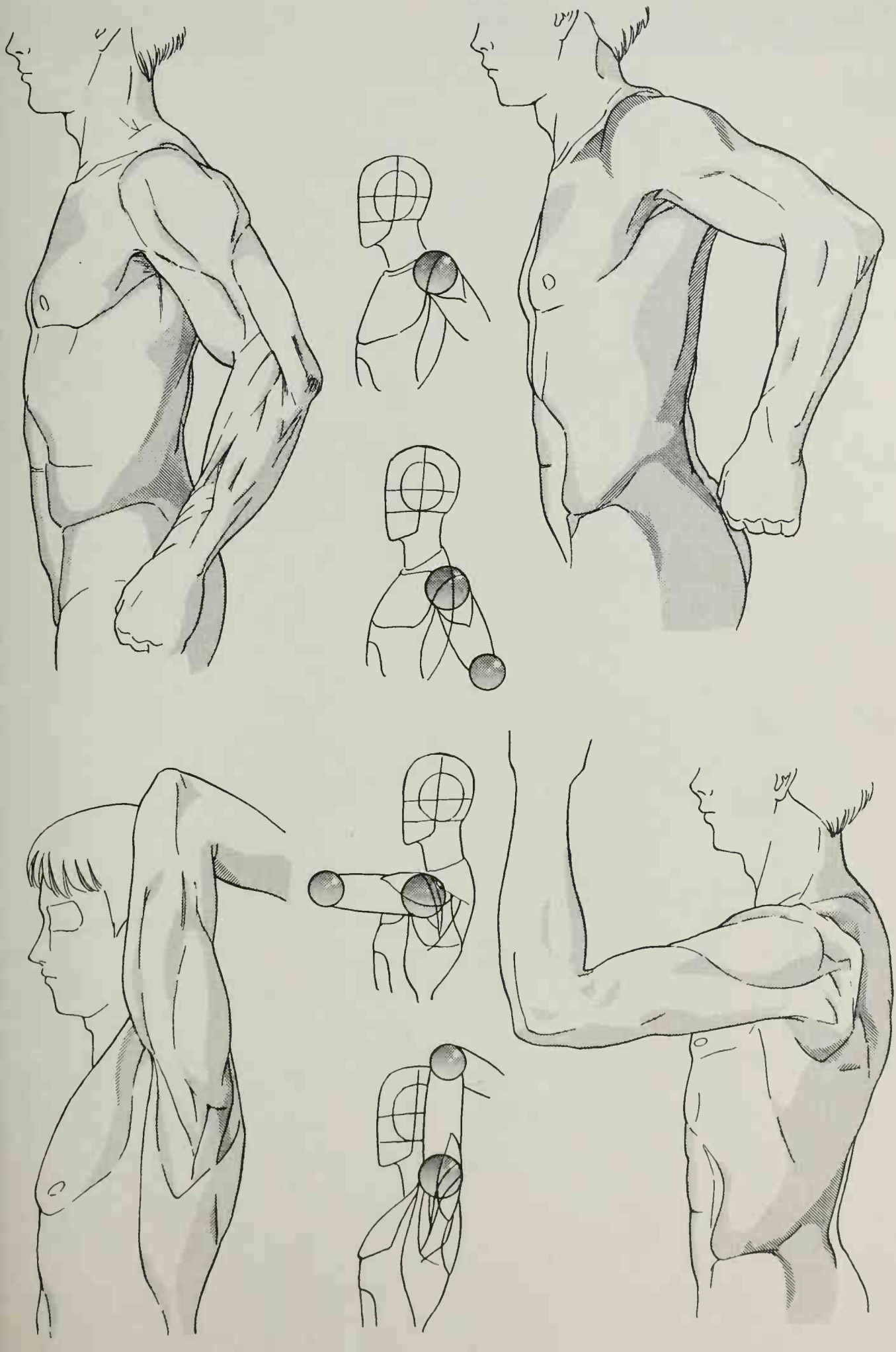






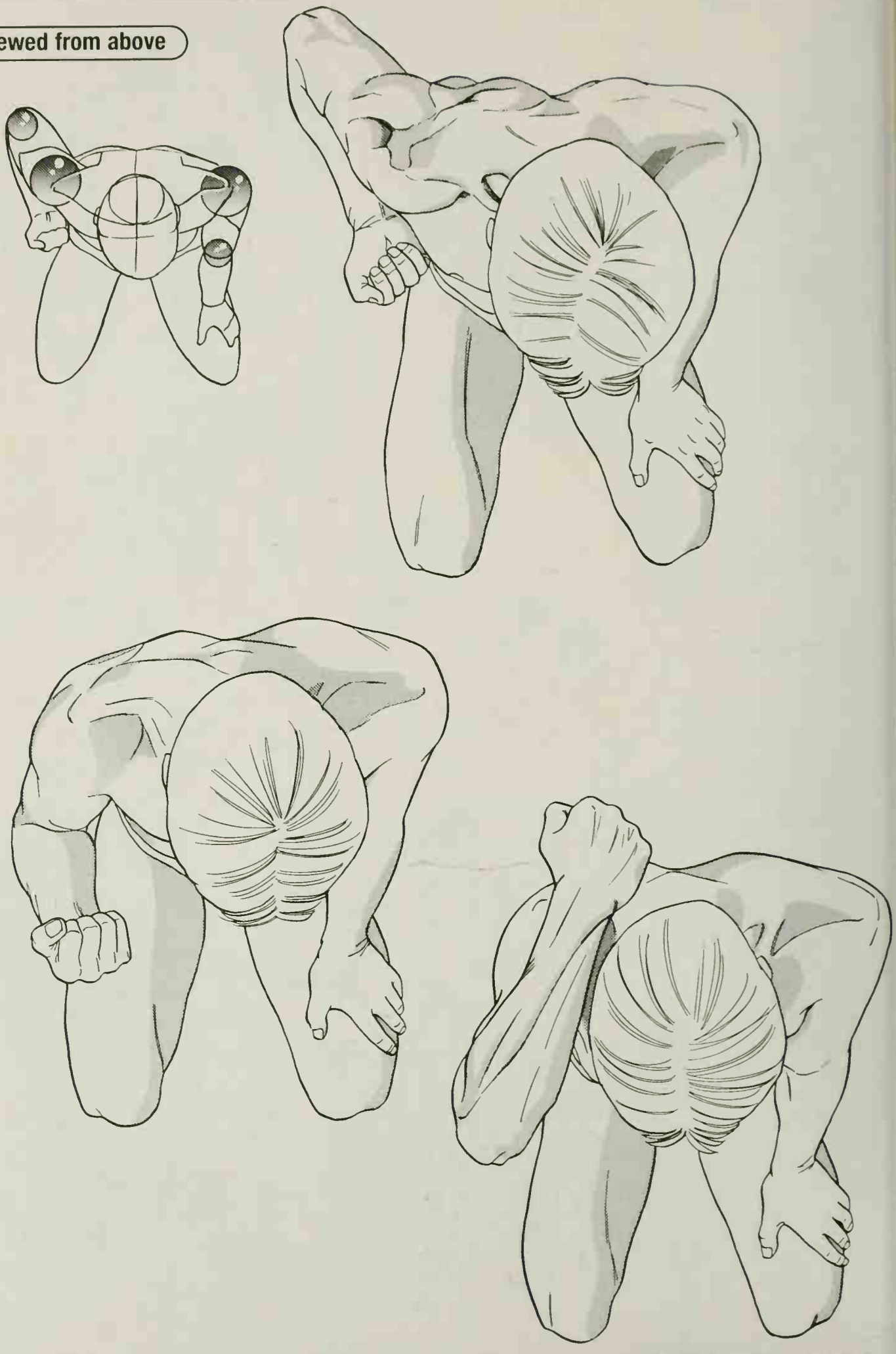
Front Arm Motion Variations - Part 3



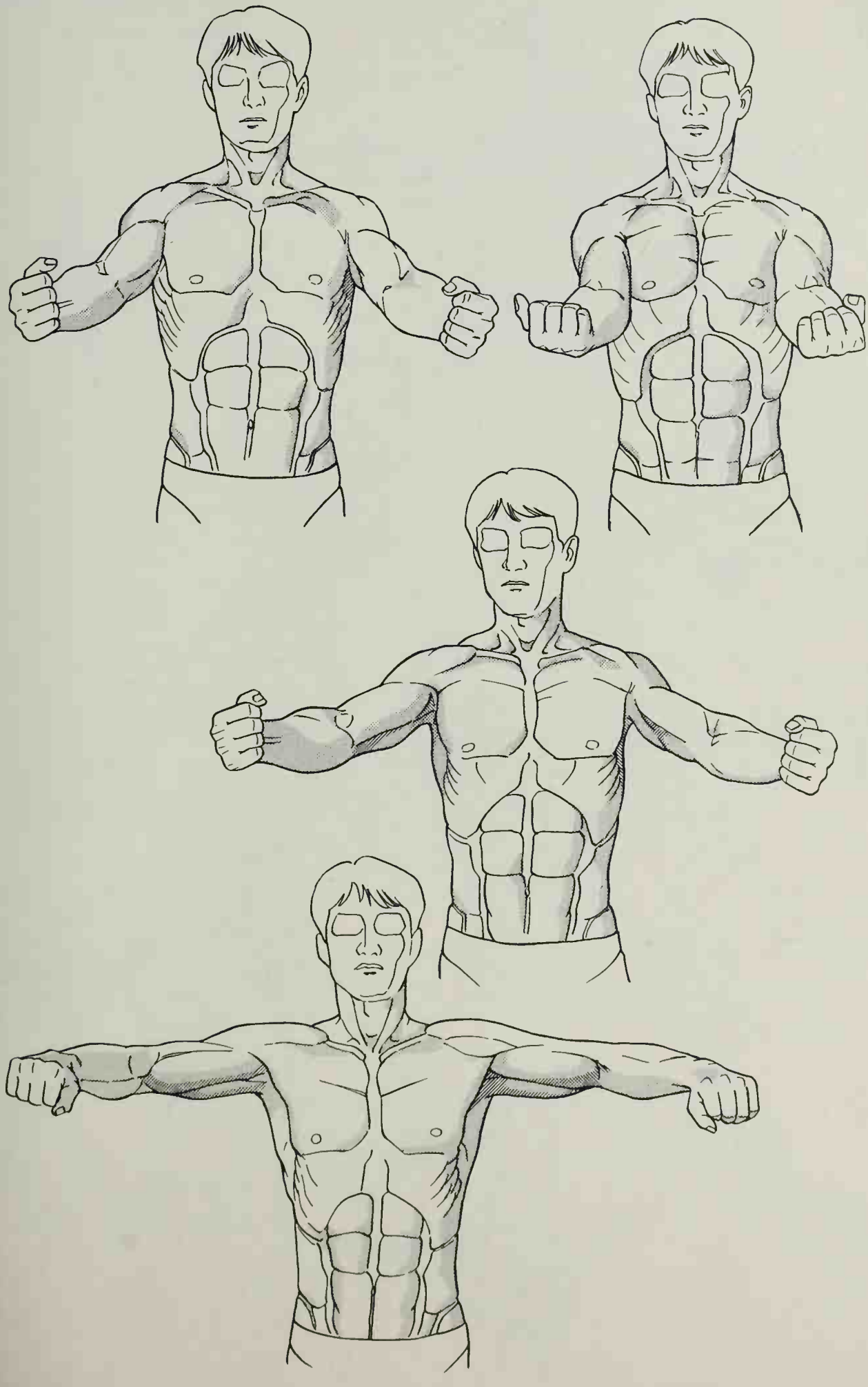


Front Arm Motion Variations - Part 4

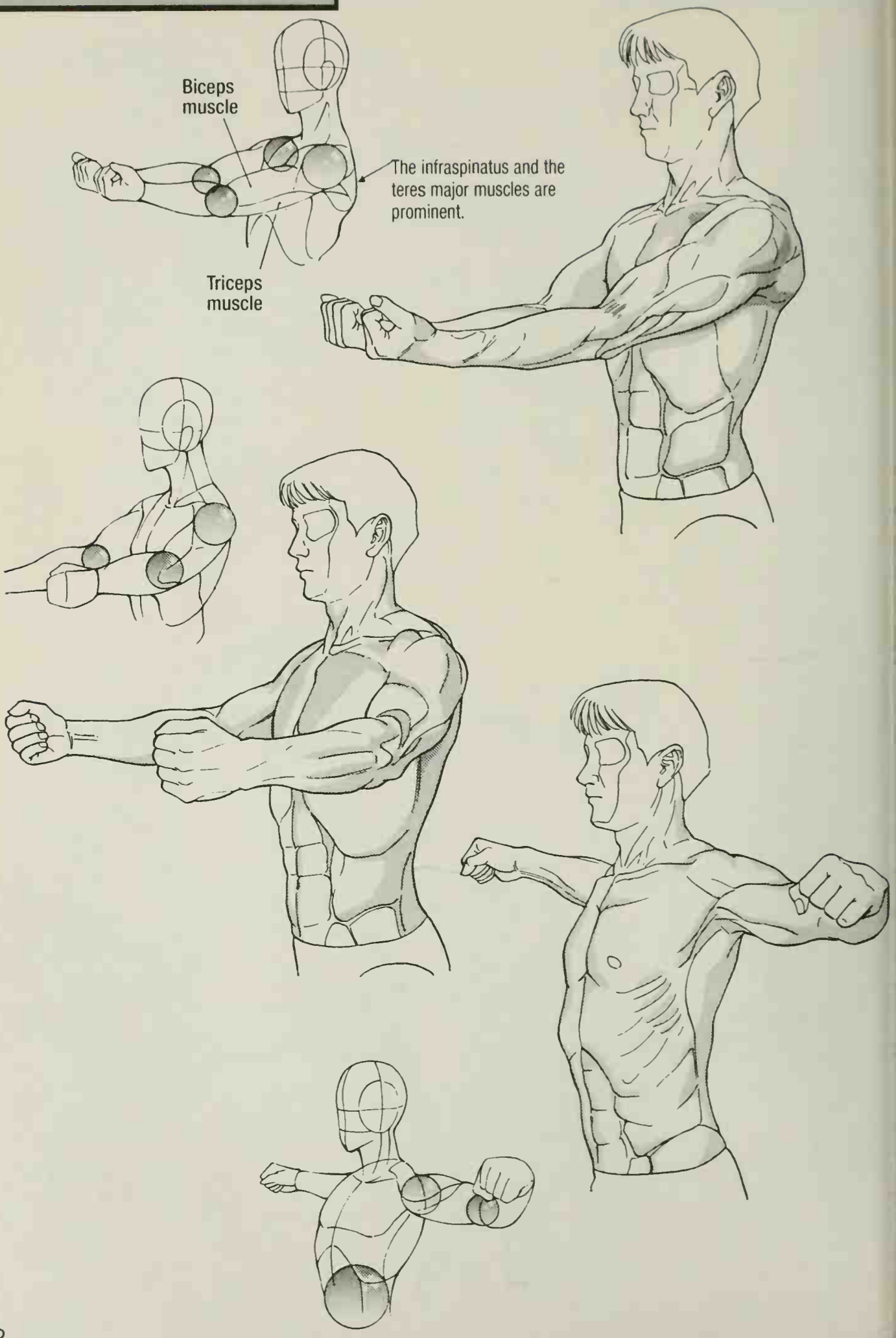
Viewed from above

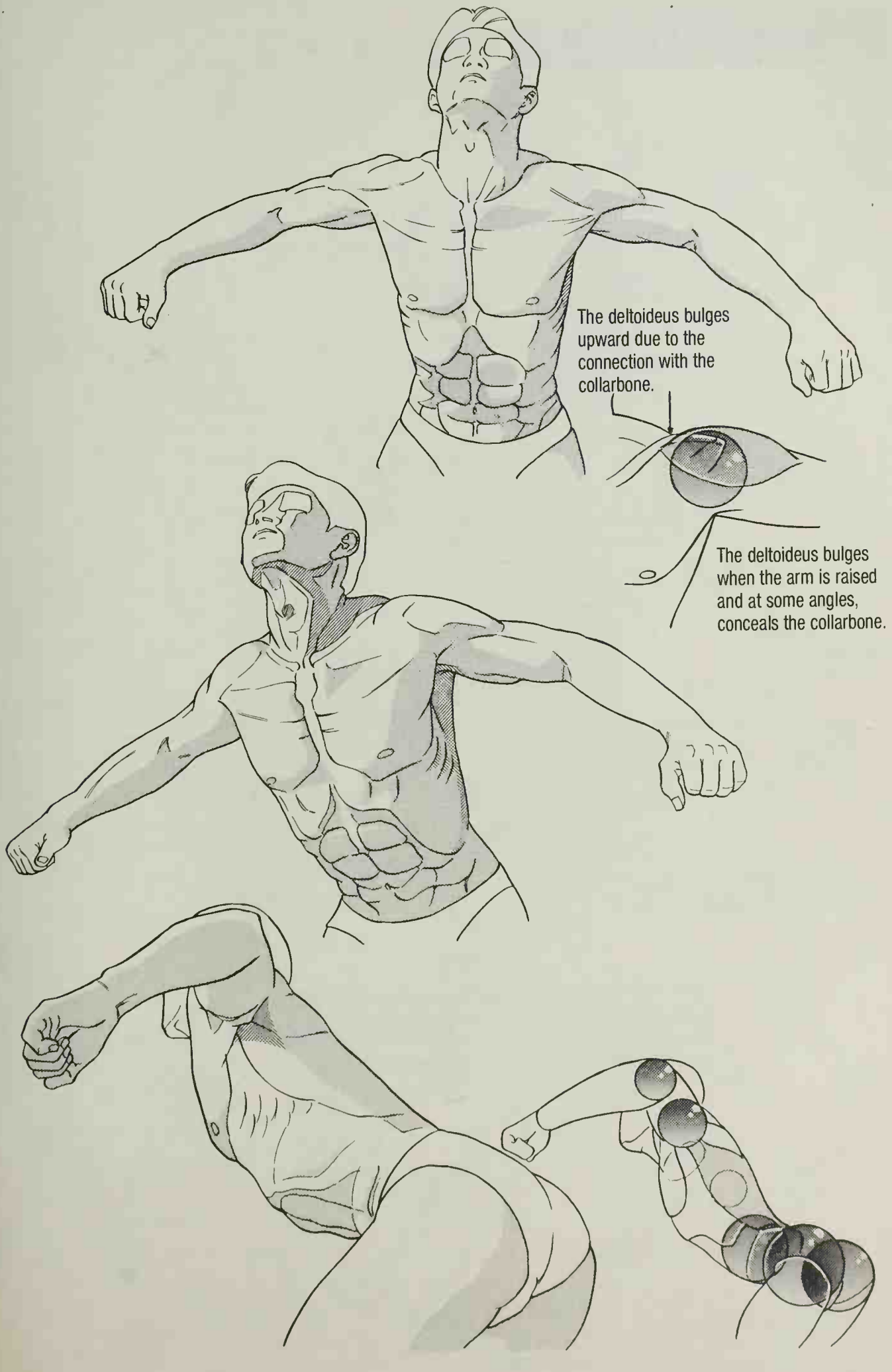


Spreading Both Arms



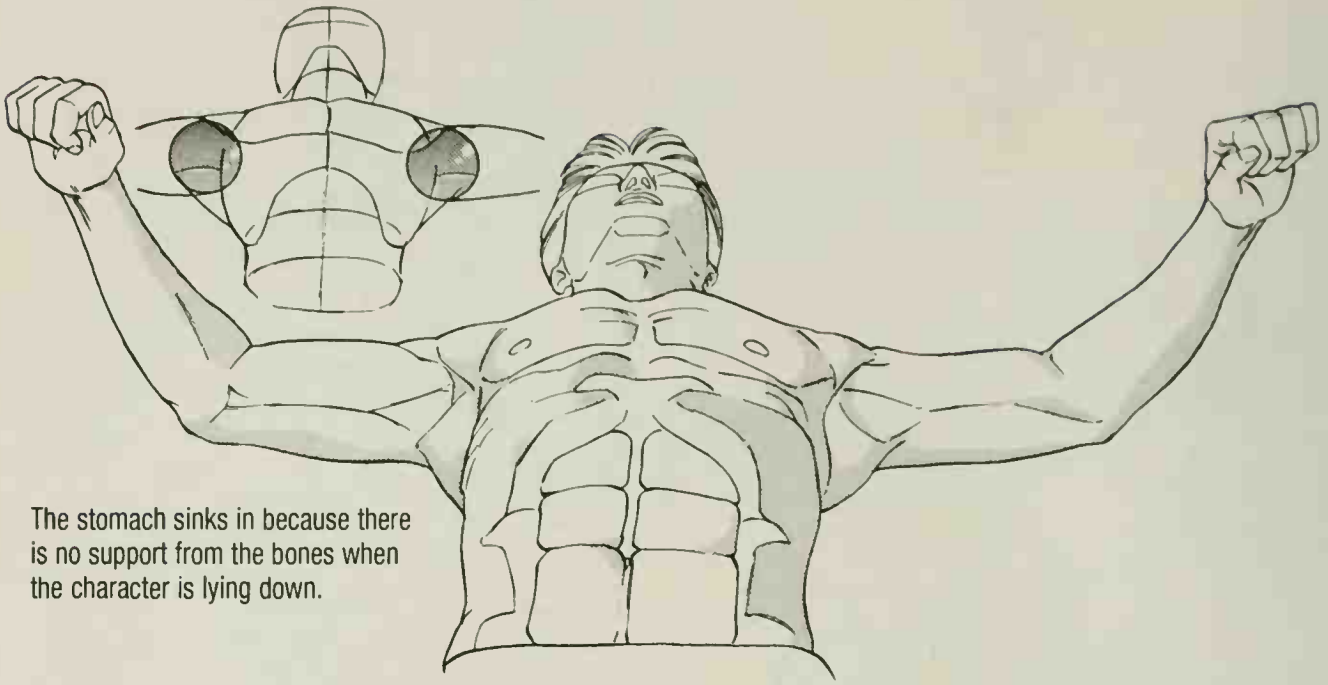
Spreading Both Arms - Part 2




The deltoideus bulges upward due to the connection with the collarbone.
The deltoideus bulges when the arm is raised and at some angles, conceals the collarbone.

Spreading Both Arms - Part 3

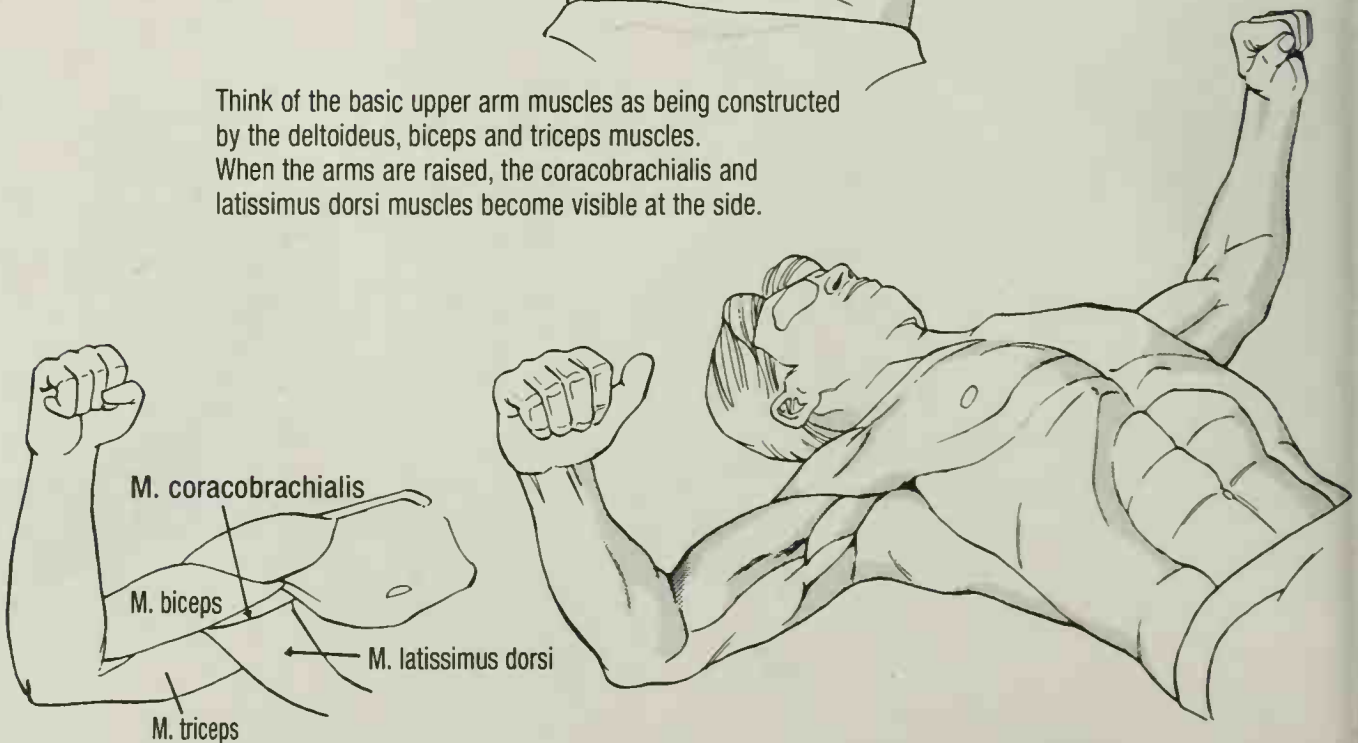
When Lying Down

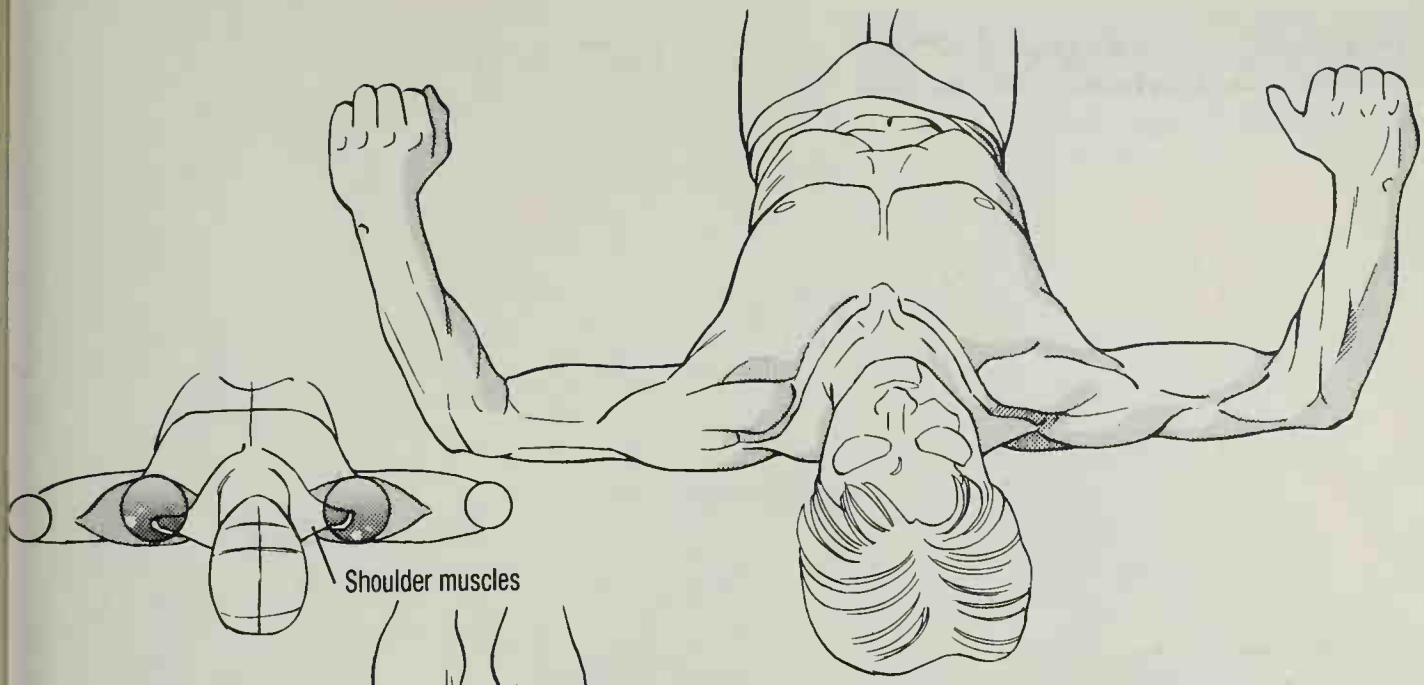


The stomach sinks in because there is no support from the bones when the character is lying down.

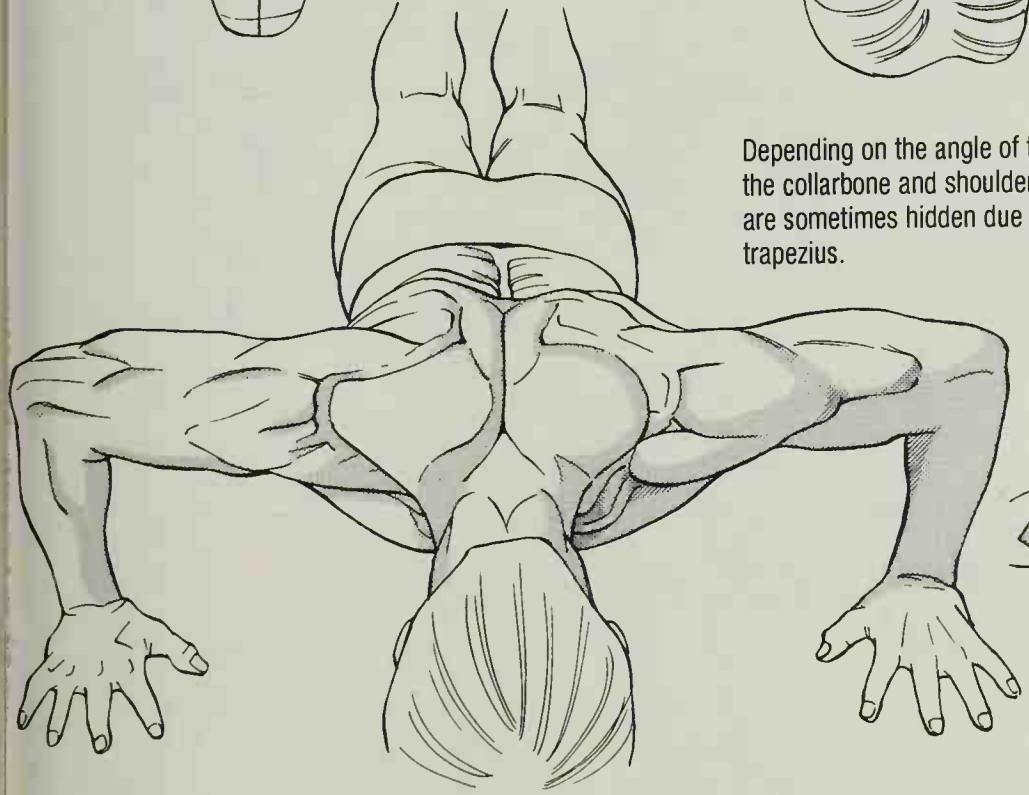
When force is applied to the arms, the stomach rises slightly.

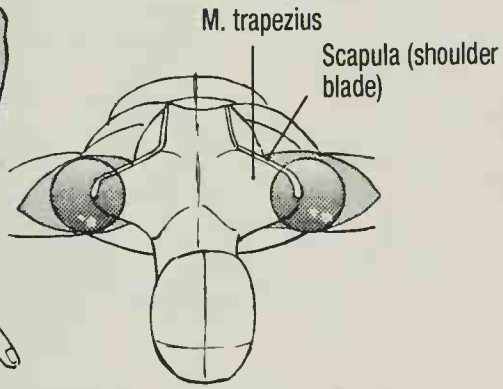
Think of the basic upper arm muscles as being constructed by the deltoideus, biceps and triceps muscles.
When the arms are raised, the coracobrachialis and latissimus dorsi muscles become visible at the side.

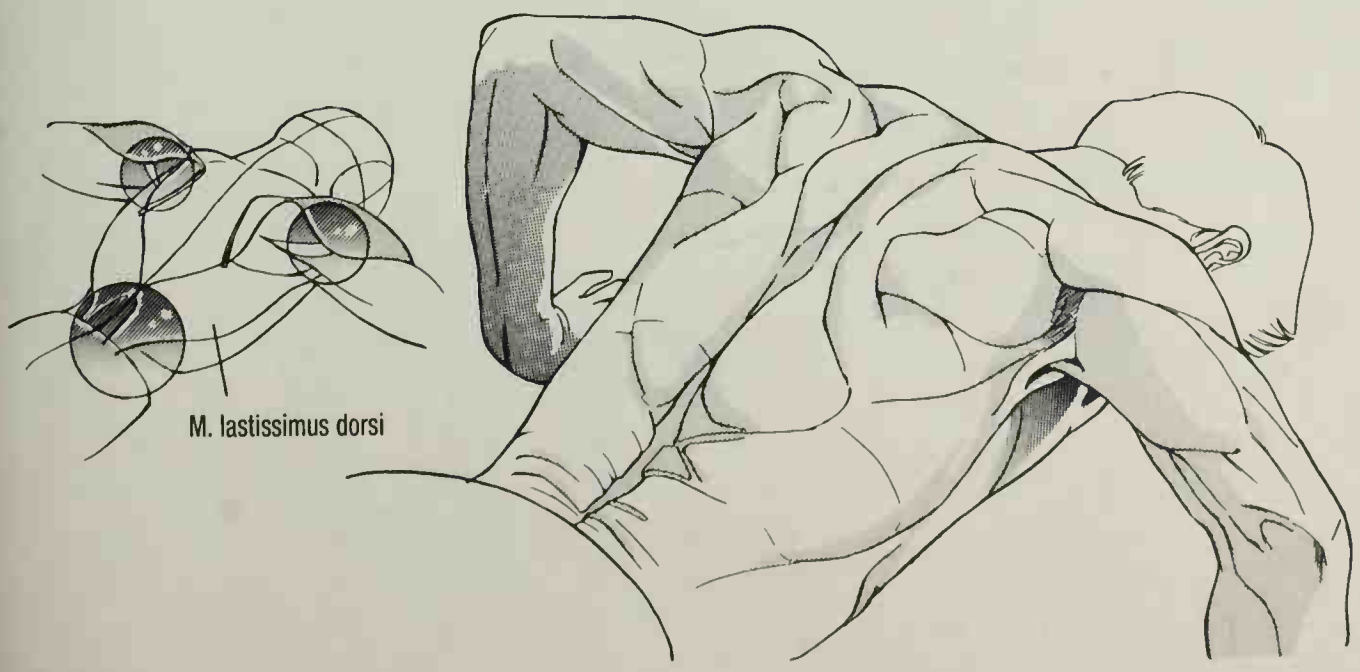




Depending on the angle of the body, the collarbone and shoulder blades are sometimes hidden due to the trapezius.

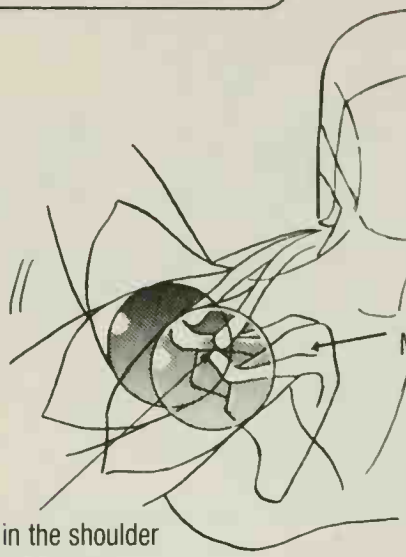






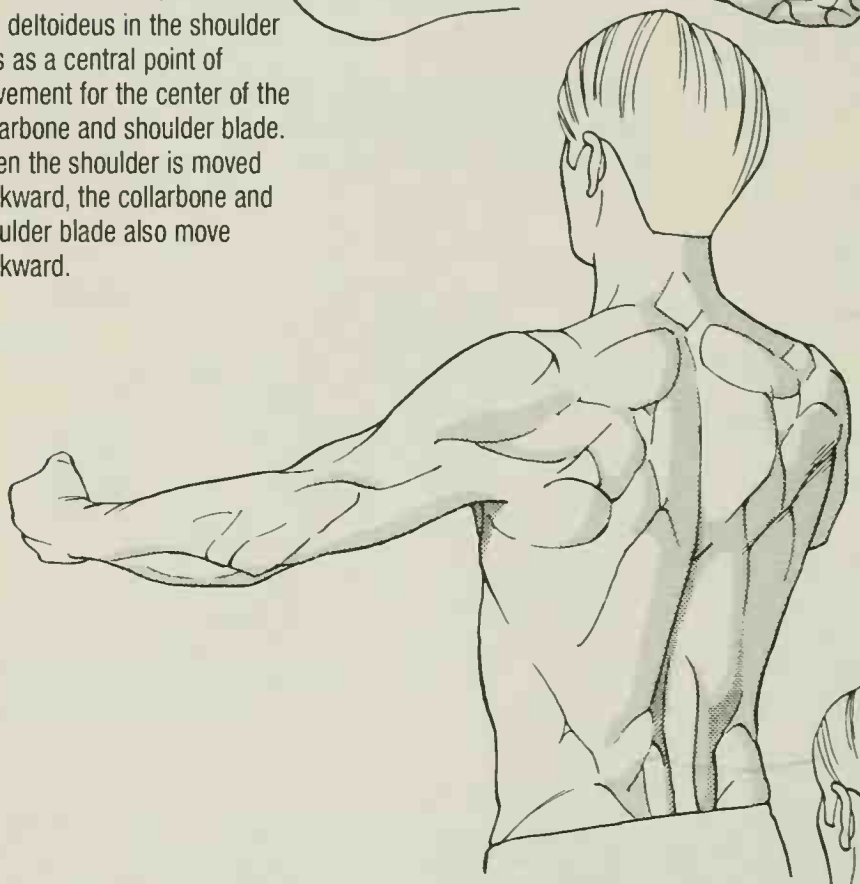
Spreading Both Arms - Part 4

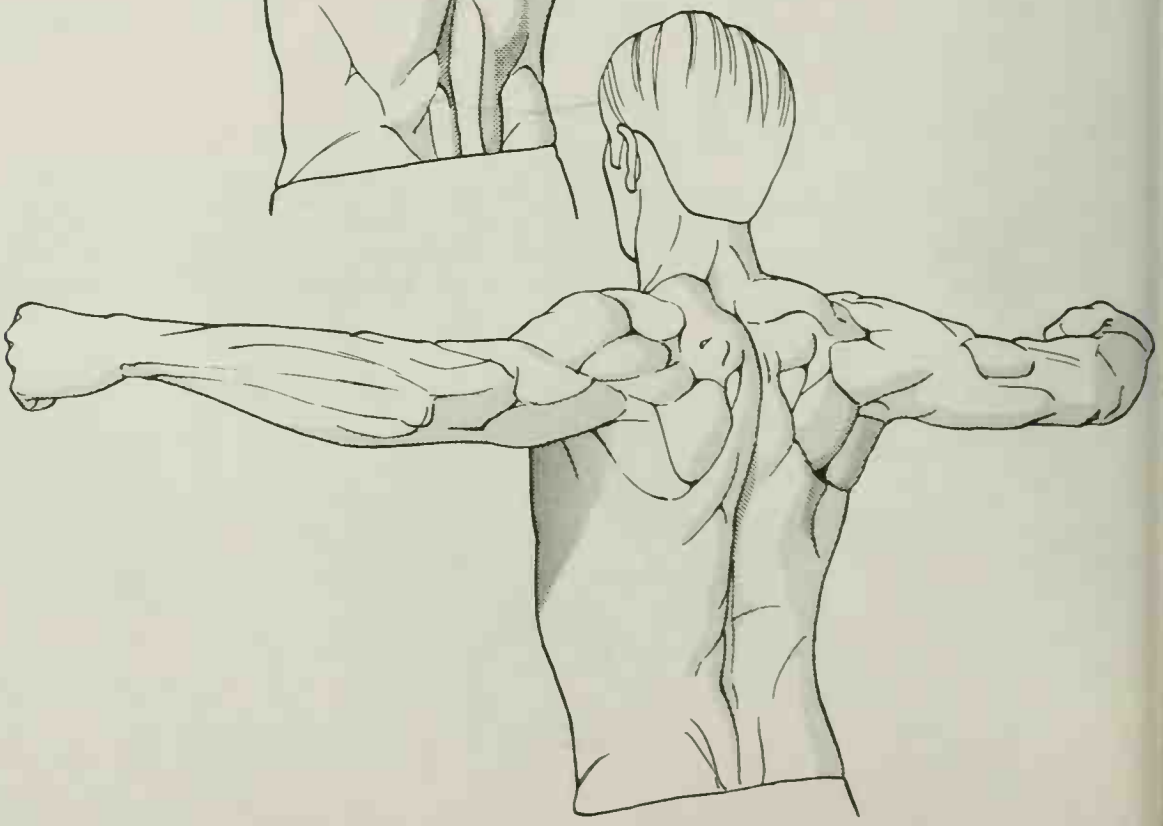
Variations in the Back Muscles

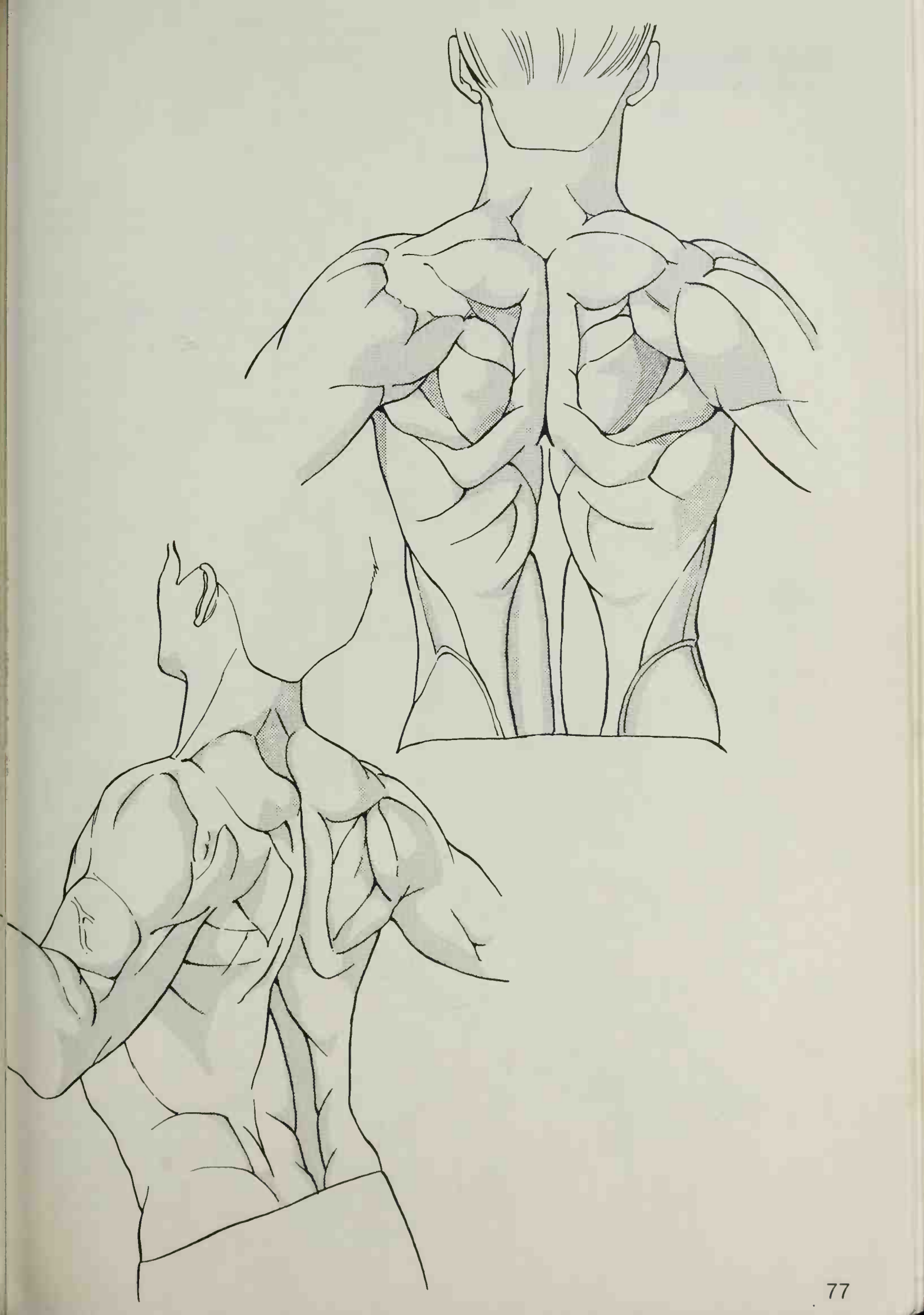


Moving towards the back

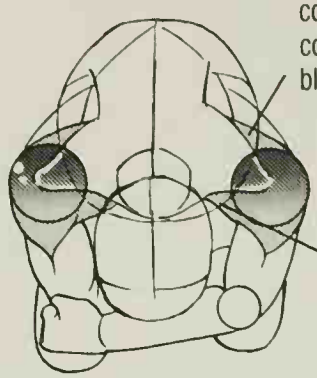
The deltoideus in the shoulder acts as a central point of movement for the center of the collarbone and shoulder blade. When the shoulder is moved backward, the collarbone and shoulder blade also move backward.





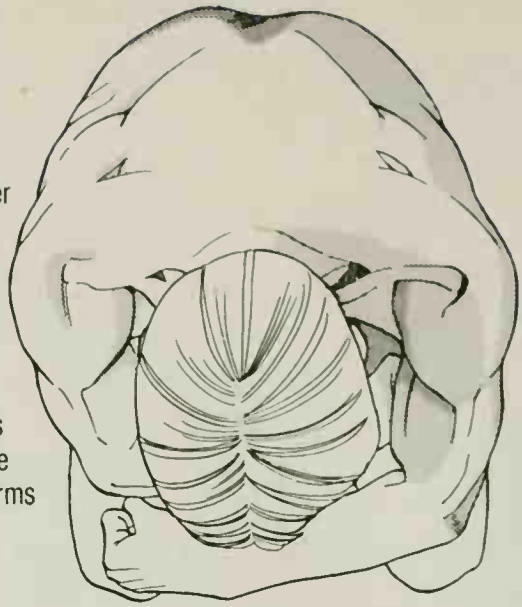


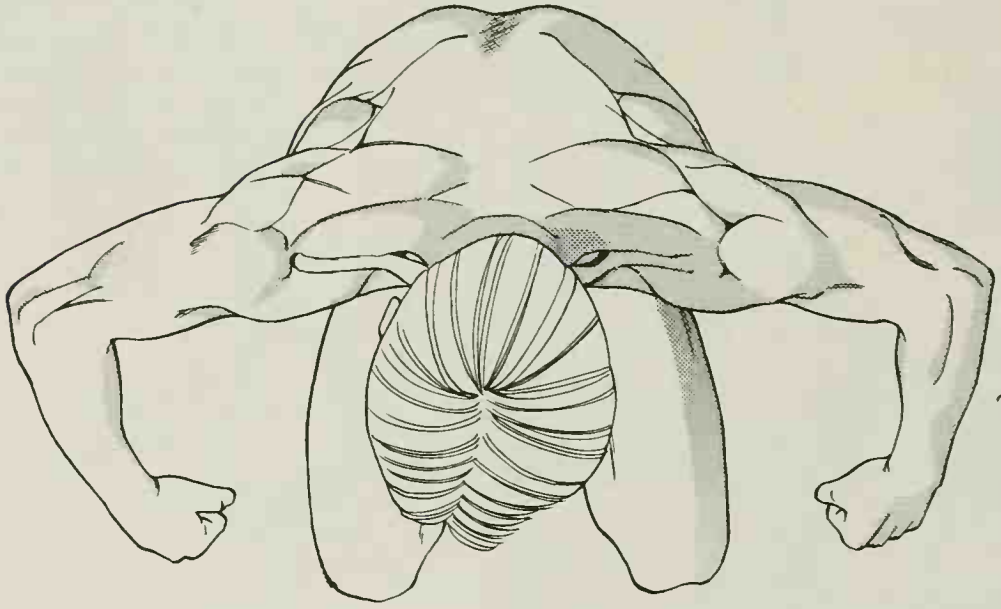
Spreading Both Arms - Part 5

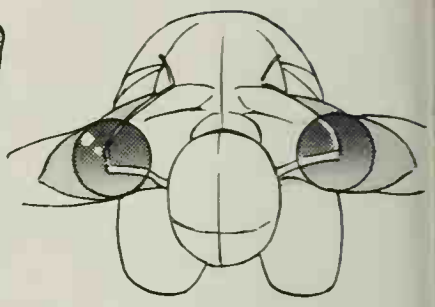


The deltoideus is connected to the collarbone and shoulder blade.

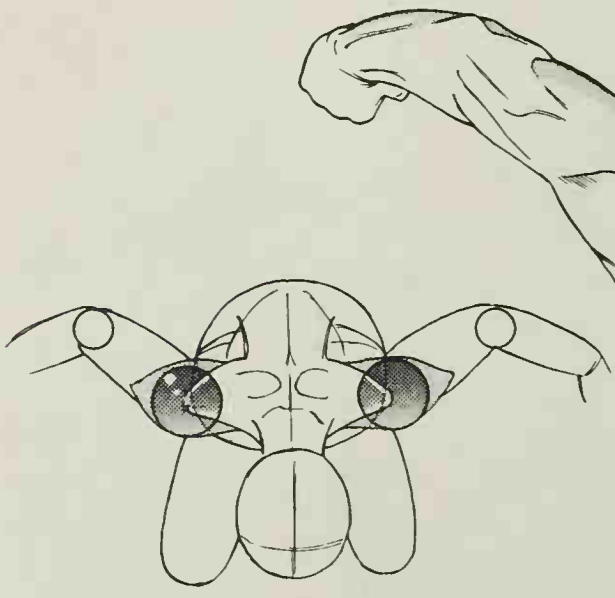
The chest muscles stretch and change shape when the arms are raised

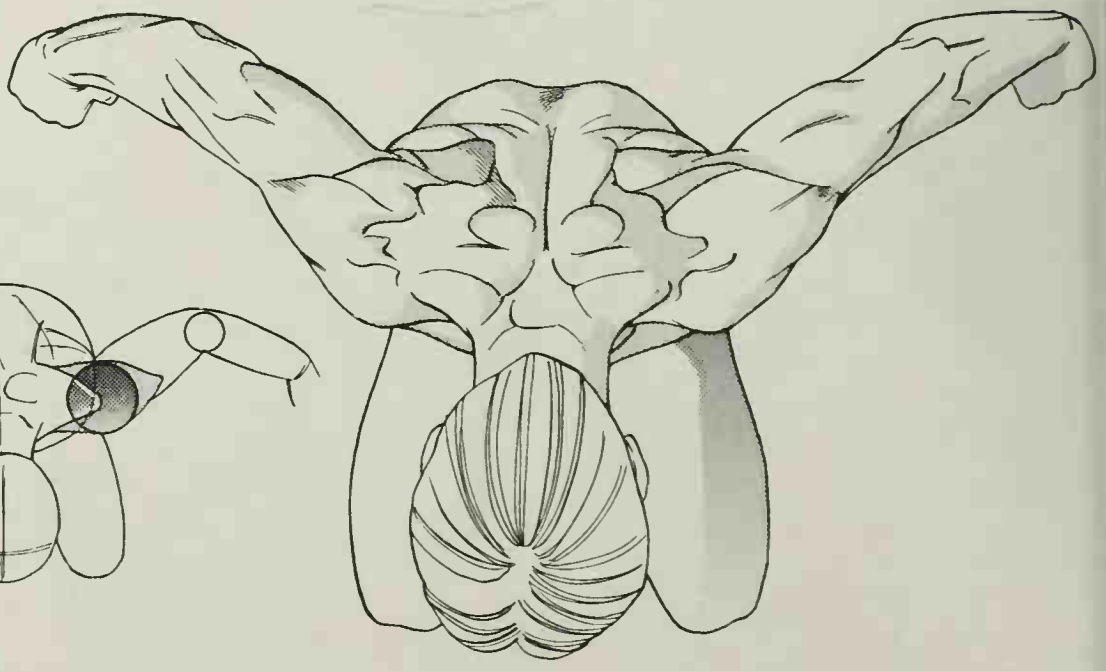


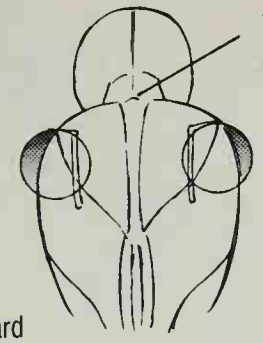




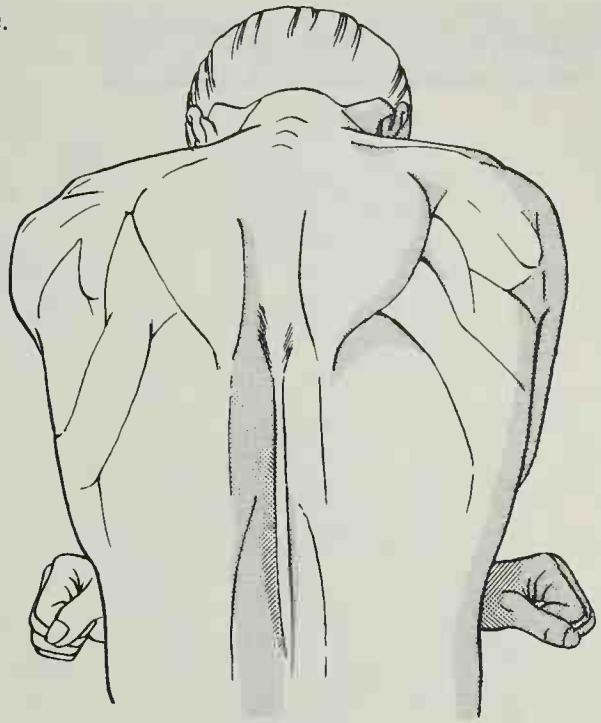
Watch the direction of the deltoideus in regard to the arm movement.







The seven cervical vertebrae are visible.



The bones move forward and backward depending on the force.

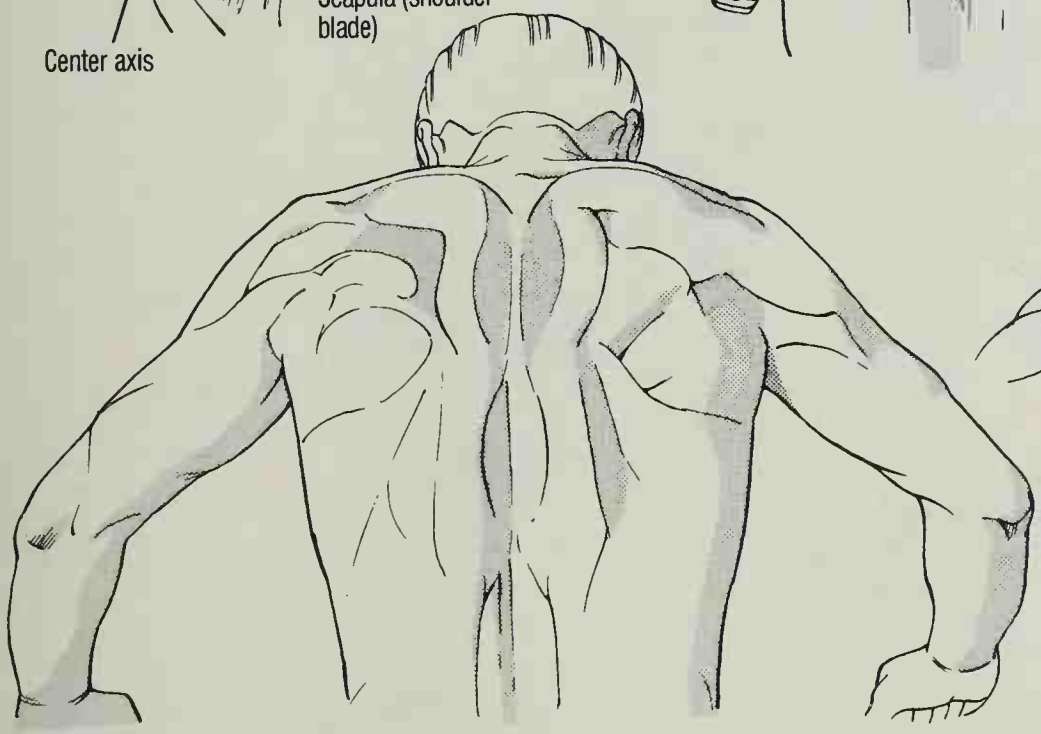
Clavicle (collarbone)

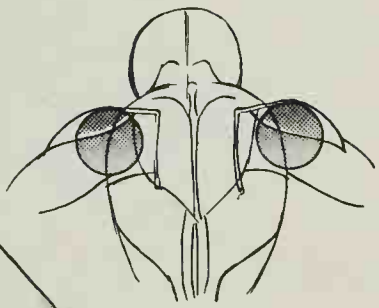
Deltoideus

The area of the arm off the deltoideus moves as an axis for the connection of the collarbone and shoulder blade.

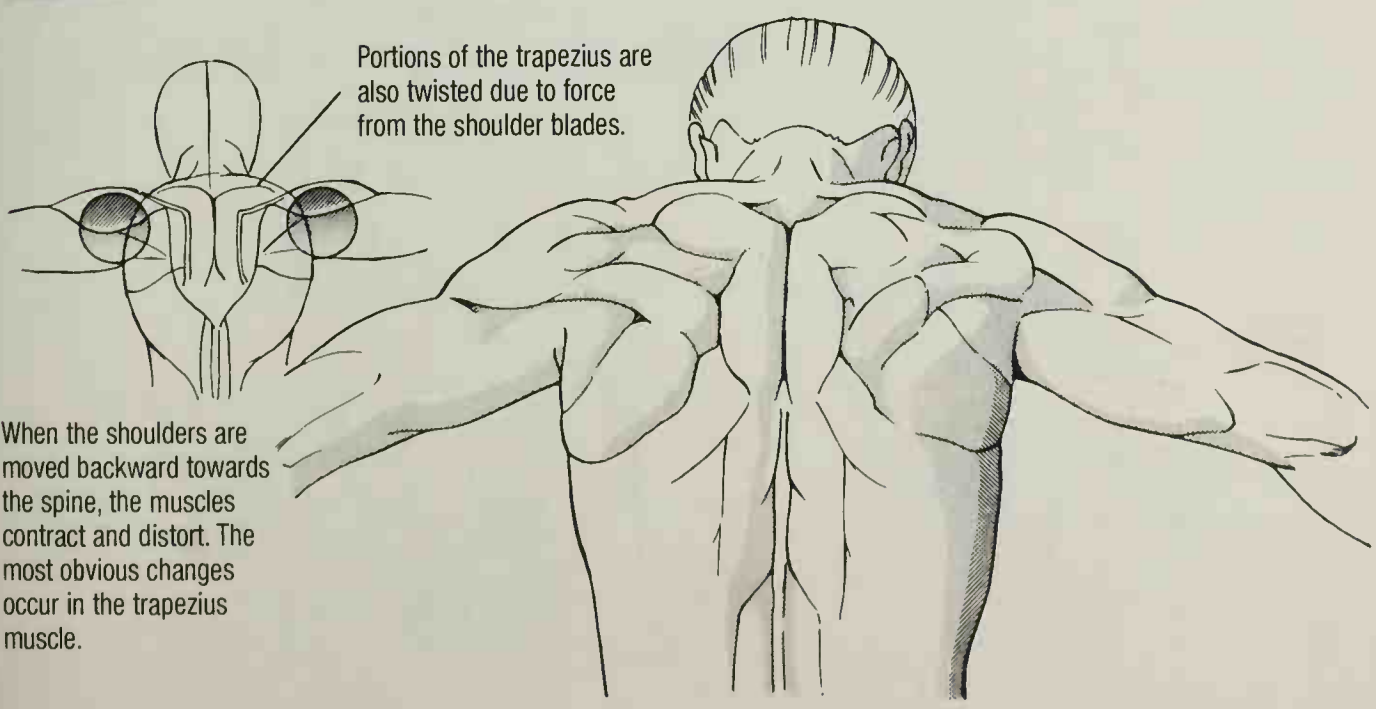
Scapula (shoulder blade)

Center axis





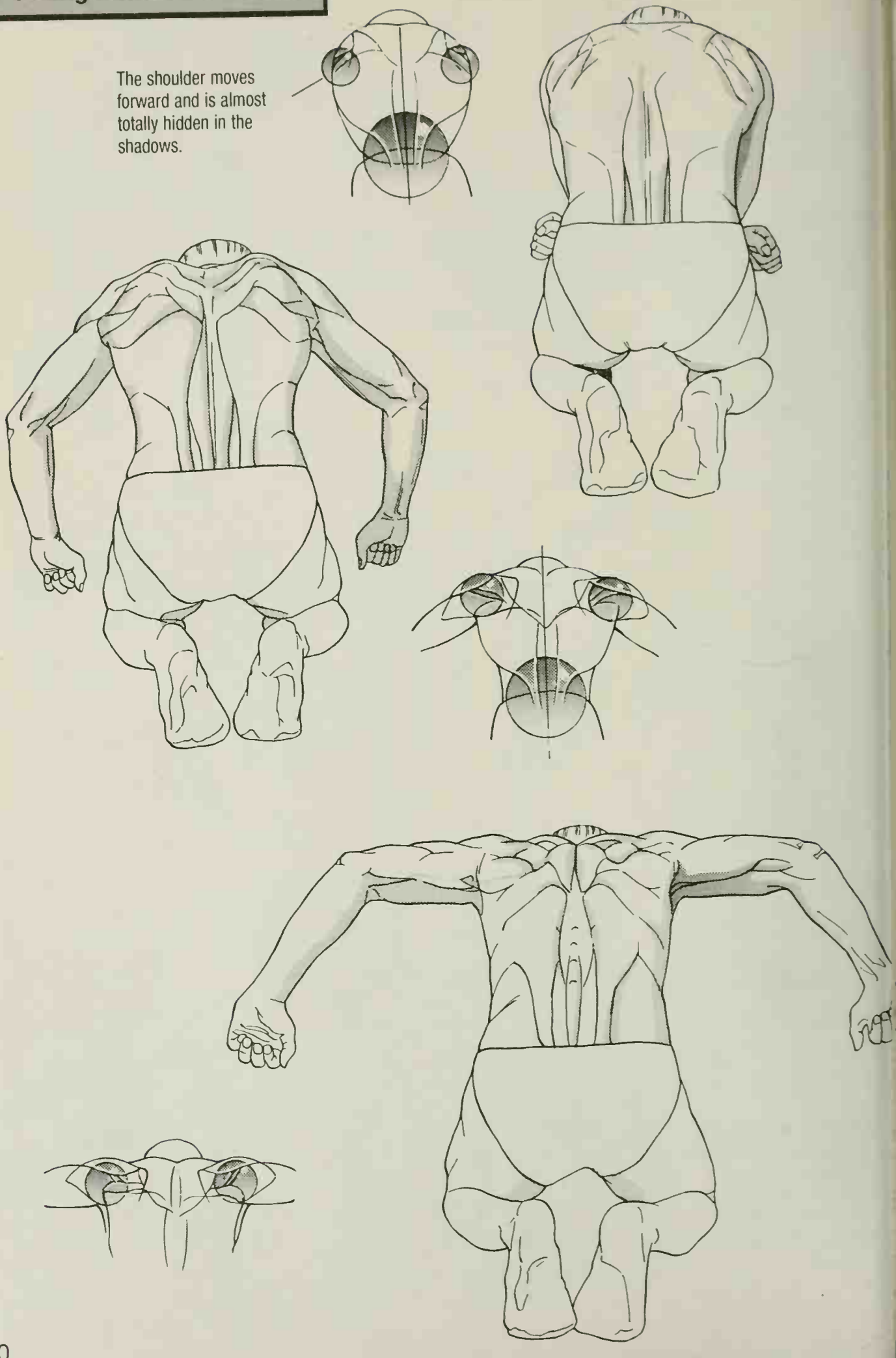
Portions of the trapezius are also twisted due to force from the shoulder blades.



When the shoulders are moved backward towards the spine, the muscles contract and distort. The most obvious changes occur in the trapezius muscle.

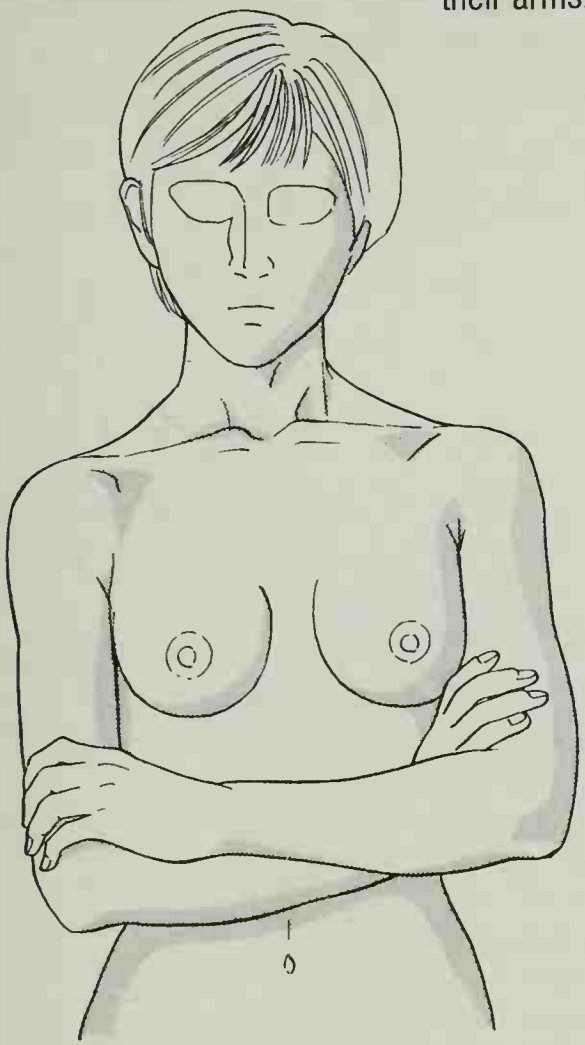
Spreading Both Arms - Part 6

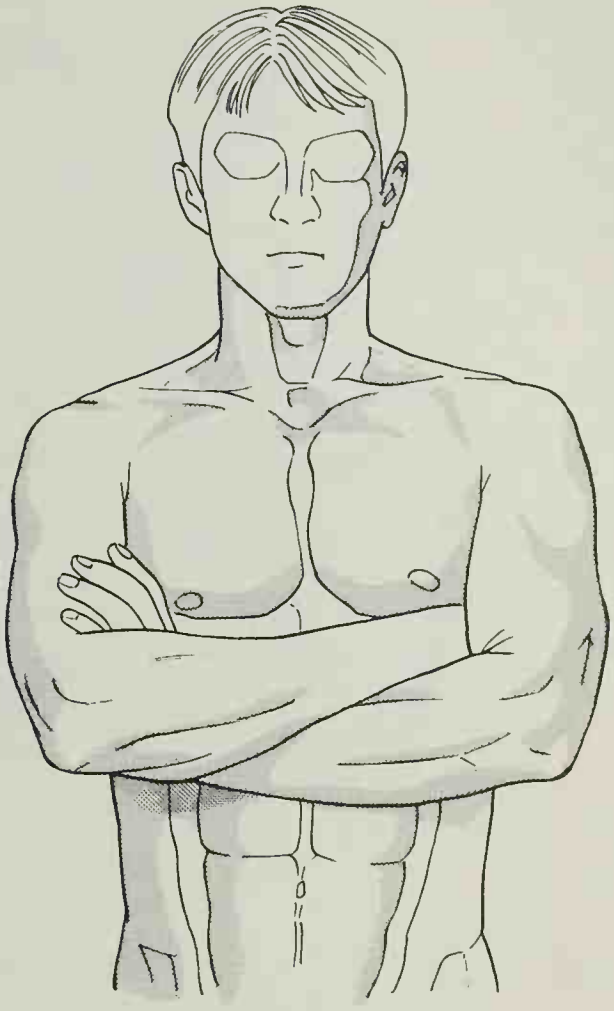
The shoulder moves forward and is almost totally hidden in the shadows.

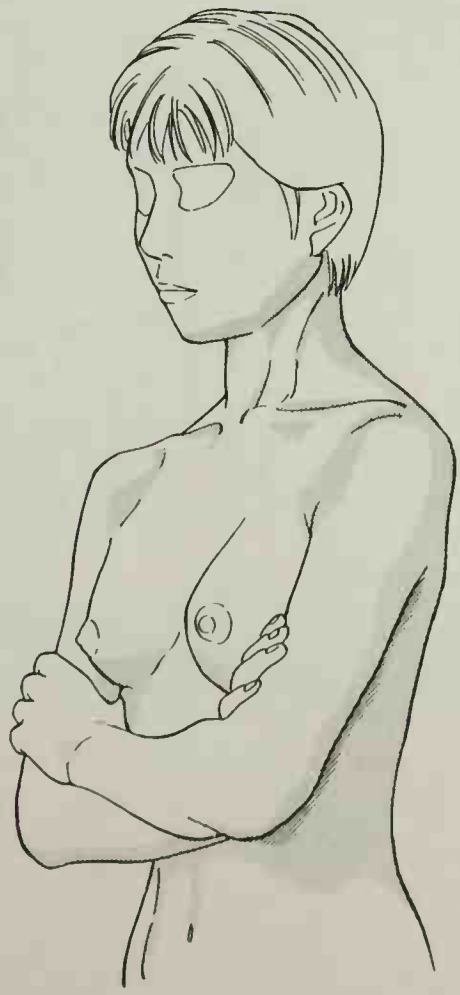


Folding Both Arms

Note the differences when men and women fold their arms.

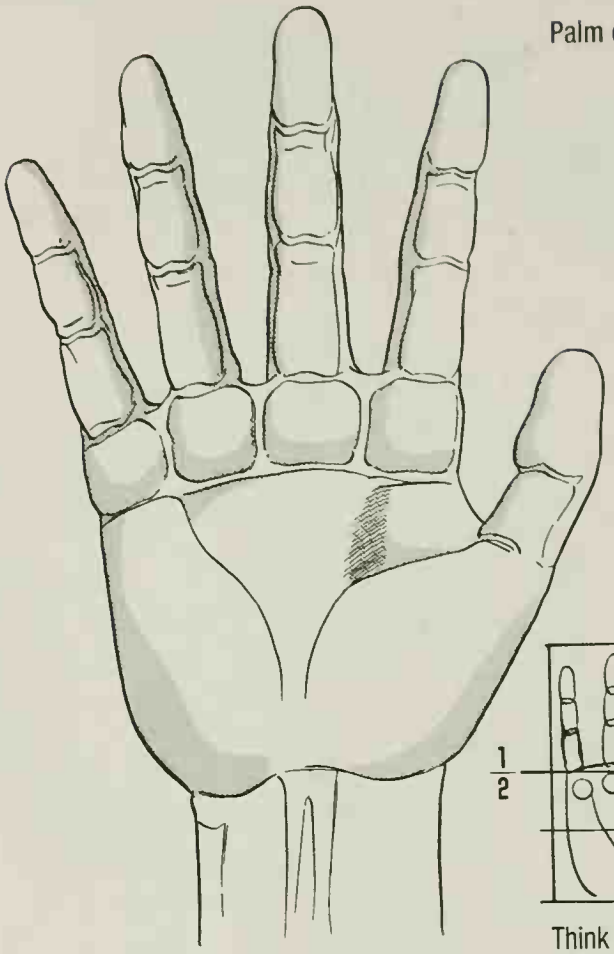


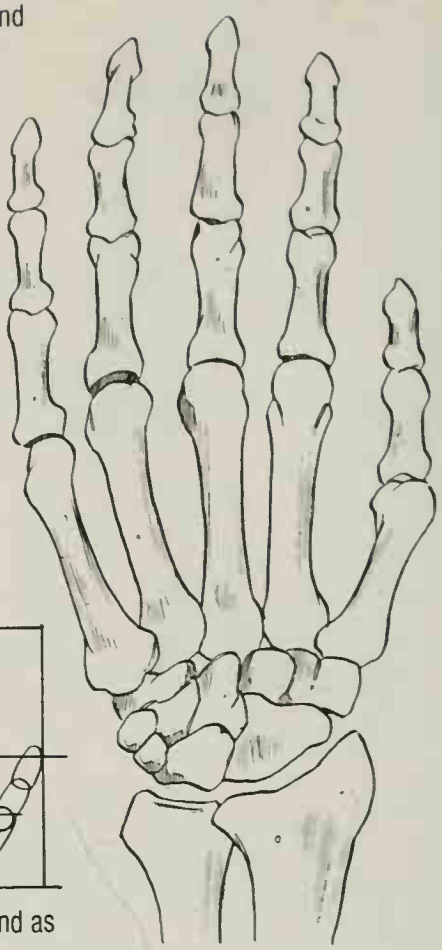


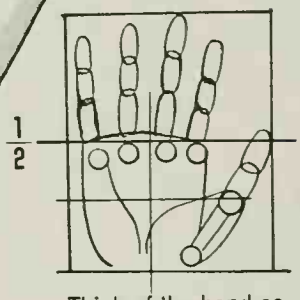


Construction of the Hand

Palm of the Hand

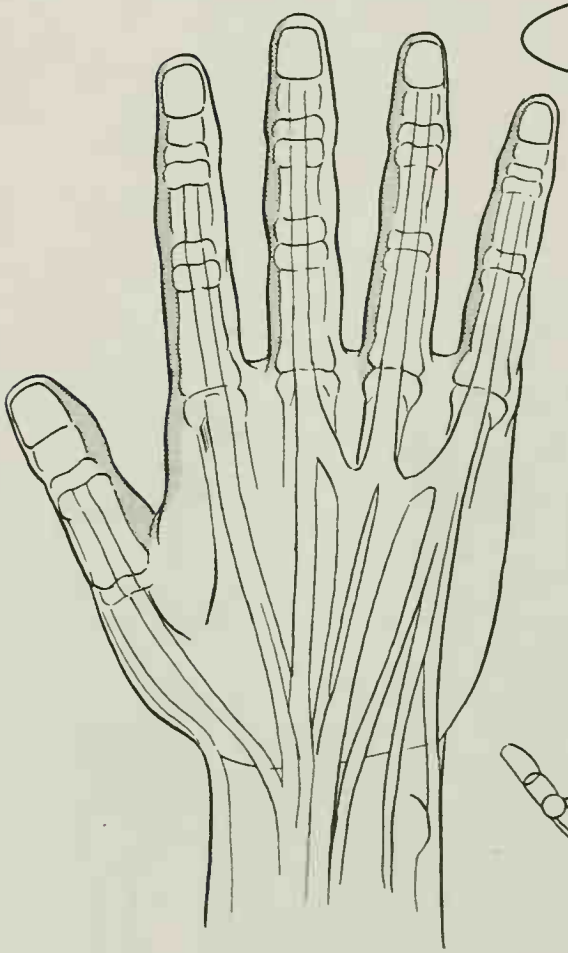


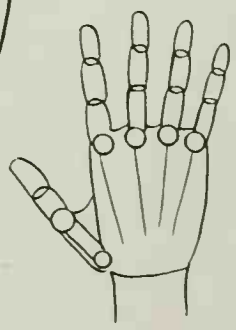


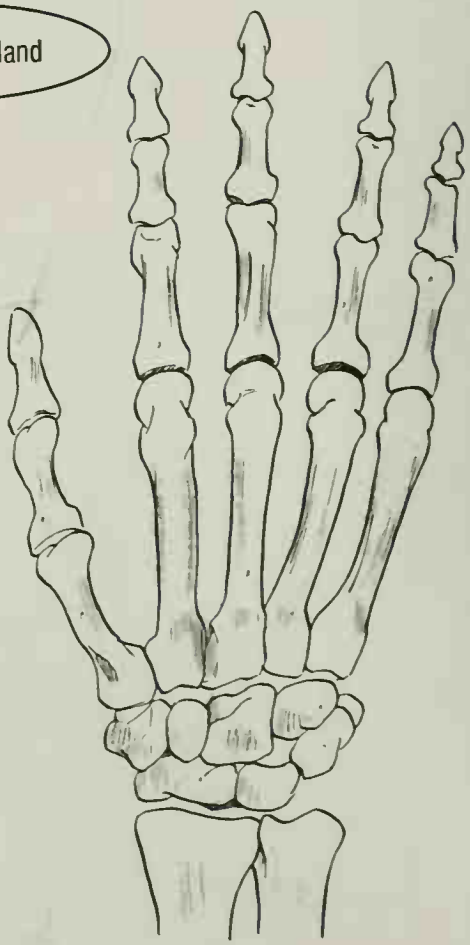


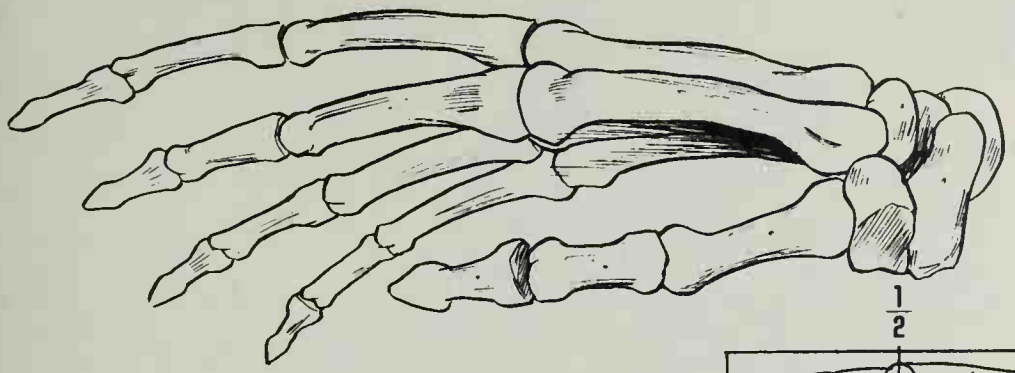
Think of the hand as simple blocks.

Back of the Hand

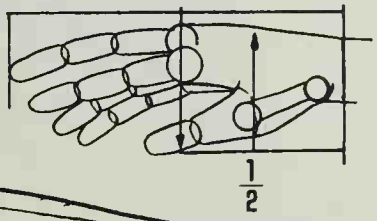


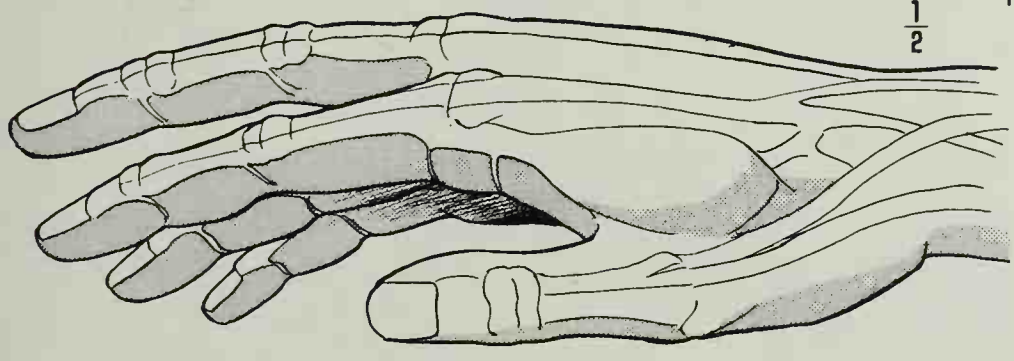


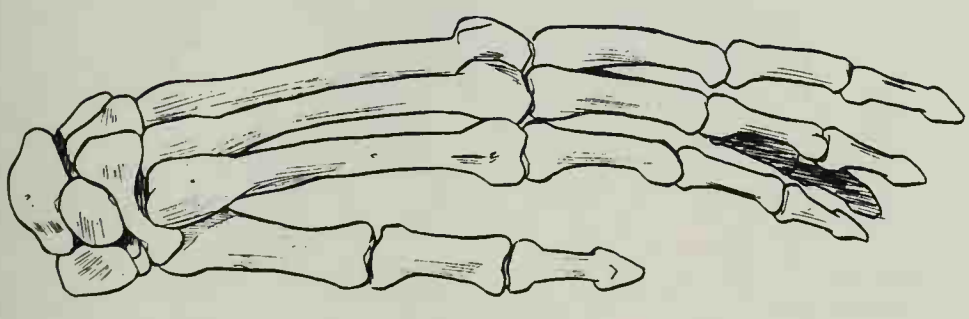


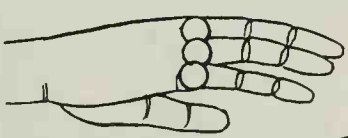


Thumb Side

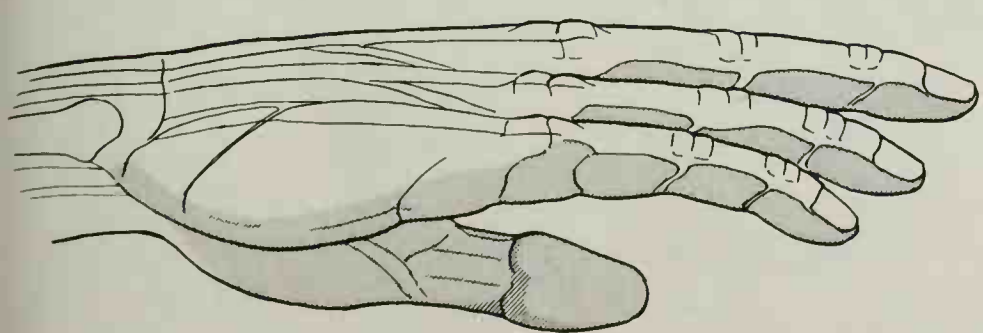




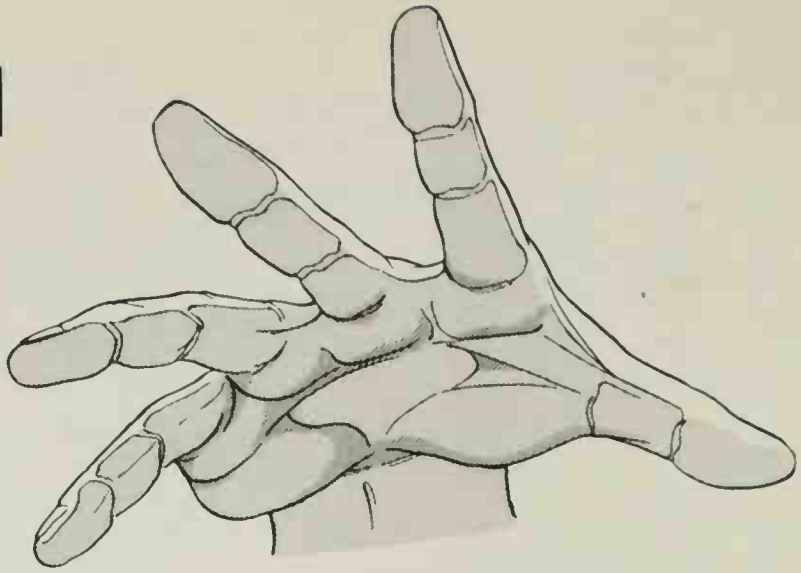


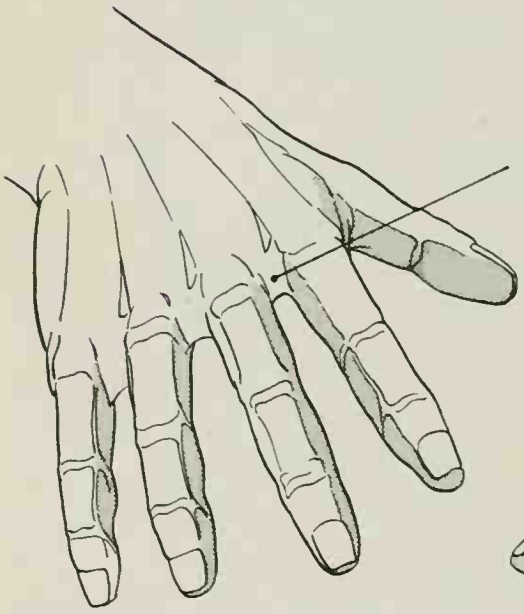


Little Finger Side

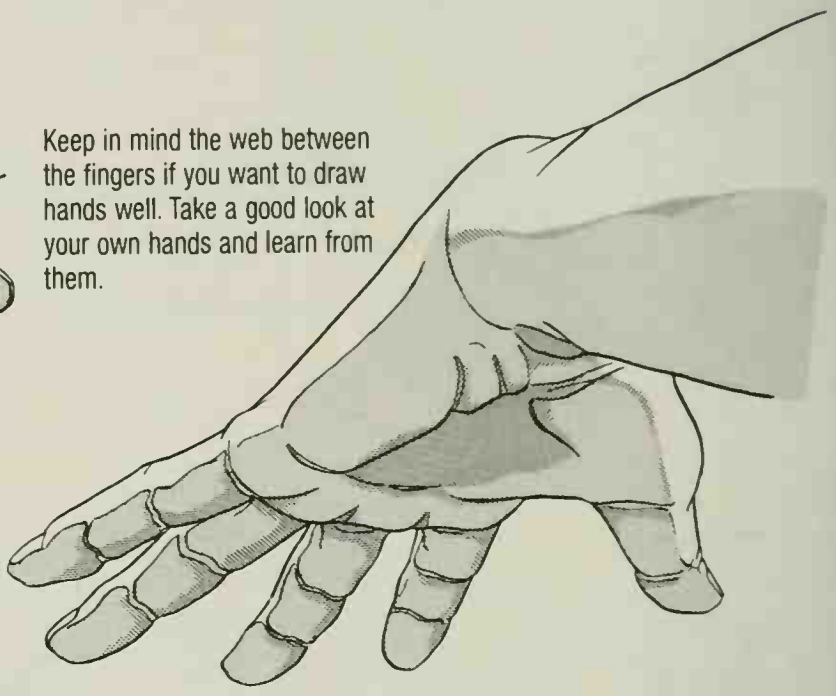


Hand Variations





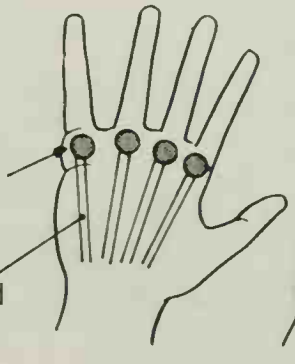
Keep in mind the web between the fingers if you want to draw hands well. Take a good look at your own hands and learn from them.

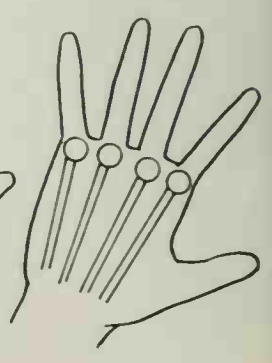


Note the web between the fingers and avoid drawing them in a V pattern.

This area moves in particular.

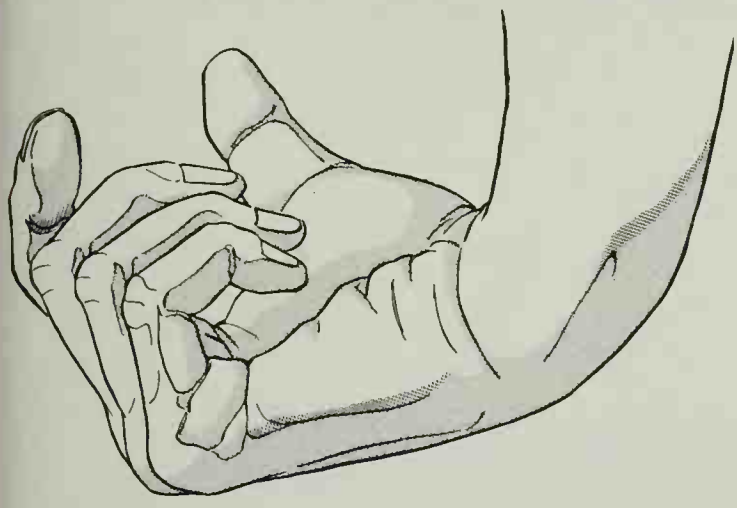
Spread

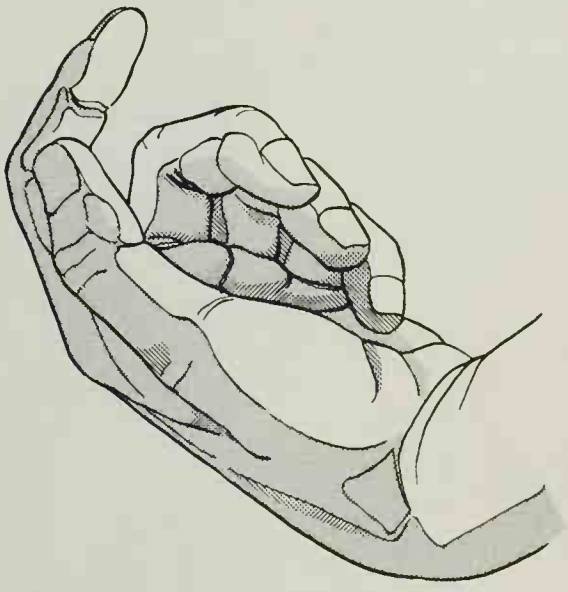


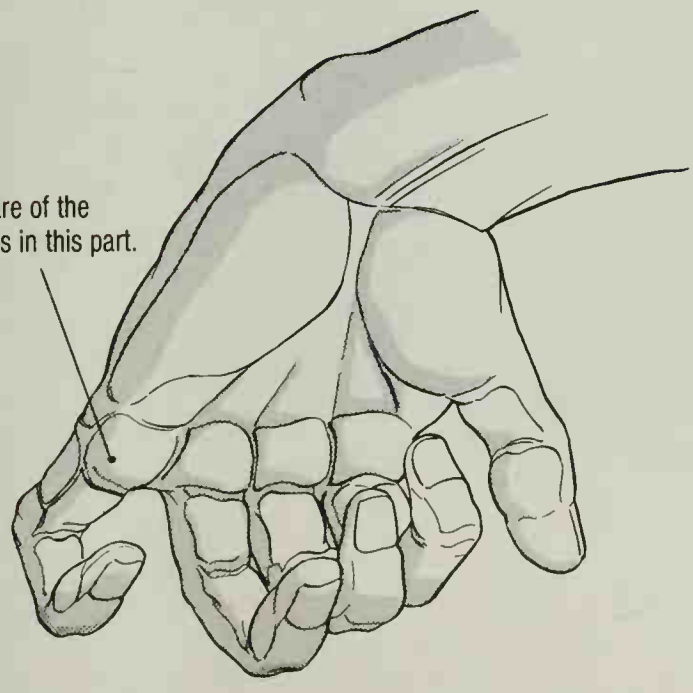


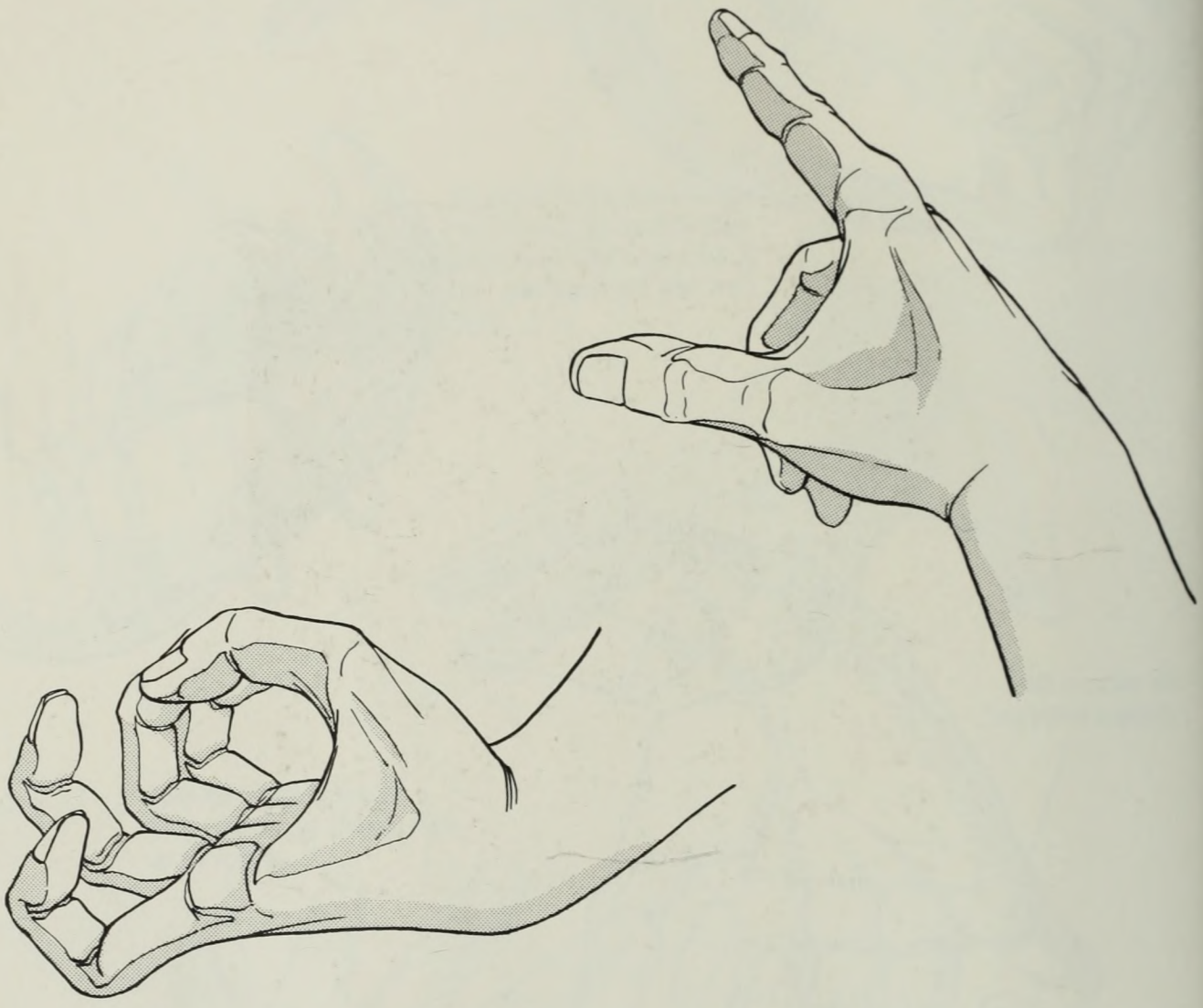
When the fingers are opened, changes also occur in the bones inside the hand.

Just spreading the fingers looks unnatural.

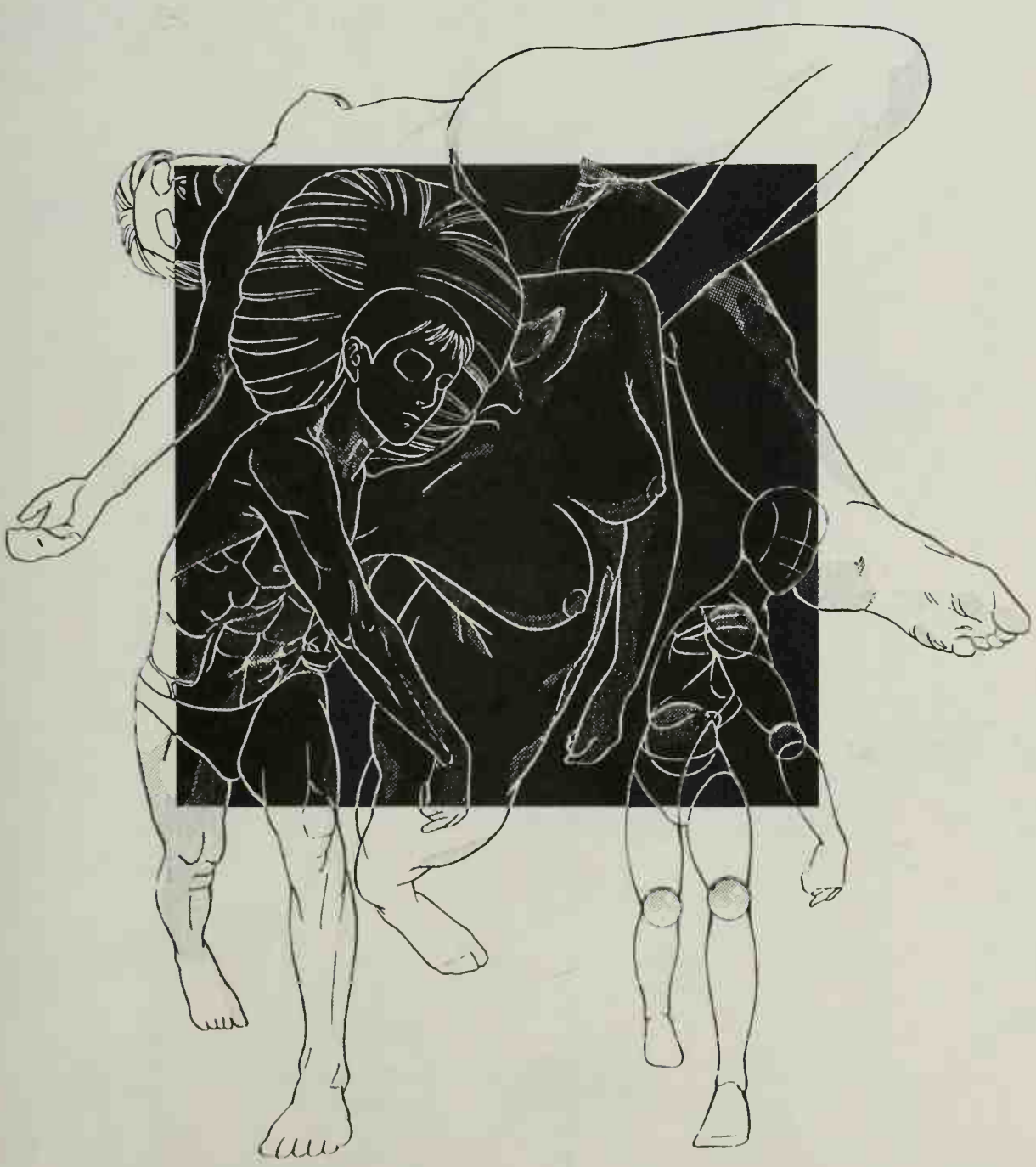




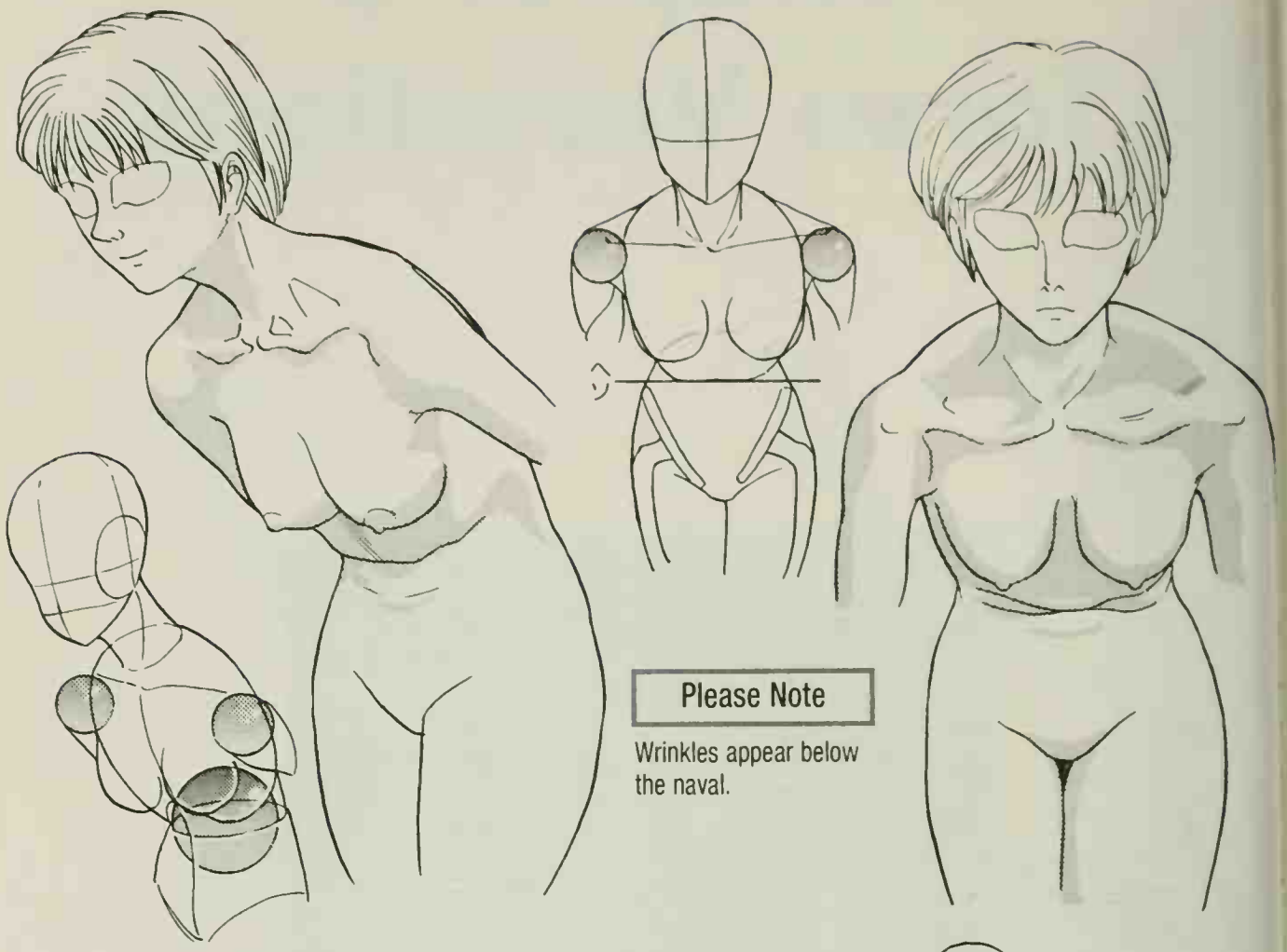

Be aware of the
changes in this part.



Chapter 3
Torso Variations

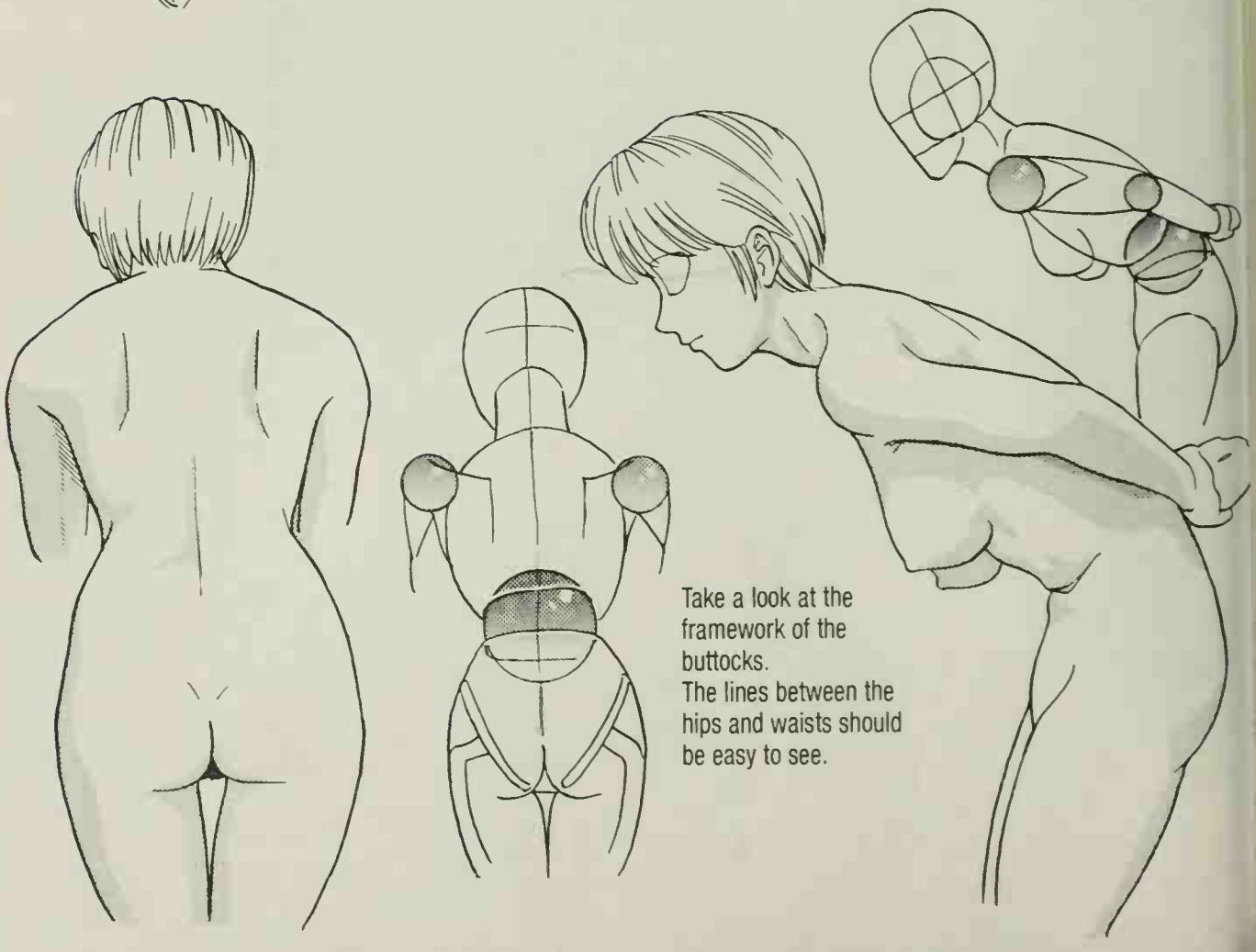


Leaning Forward (Female)

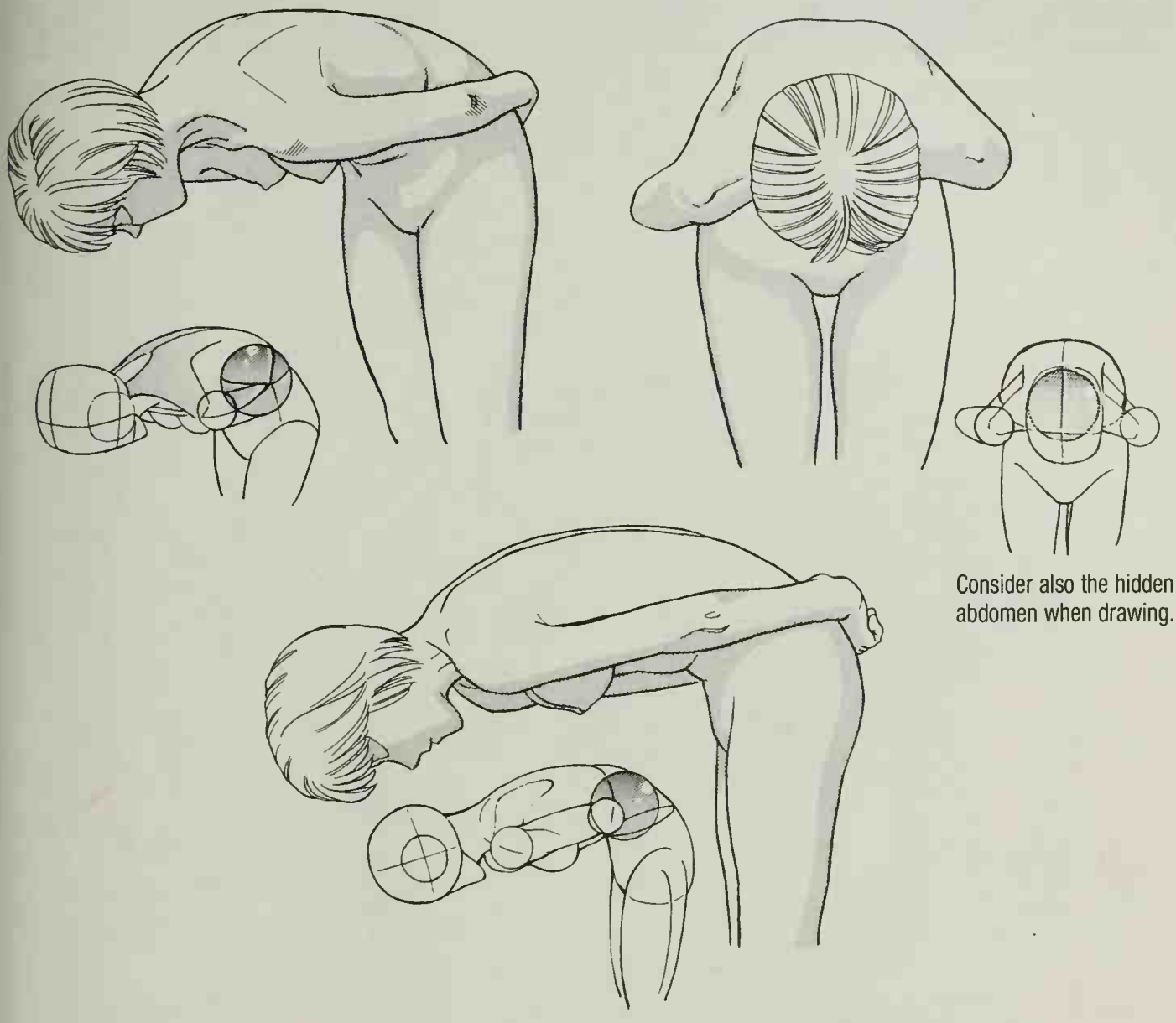


Please Note

Wrinkles appear below the naval.

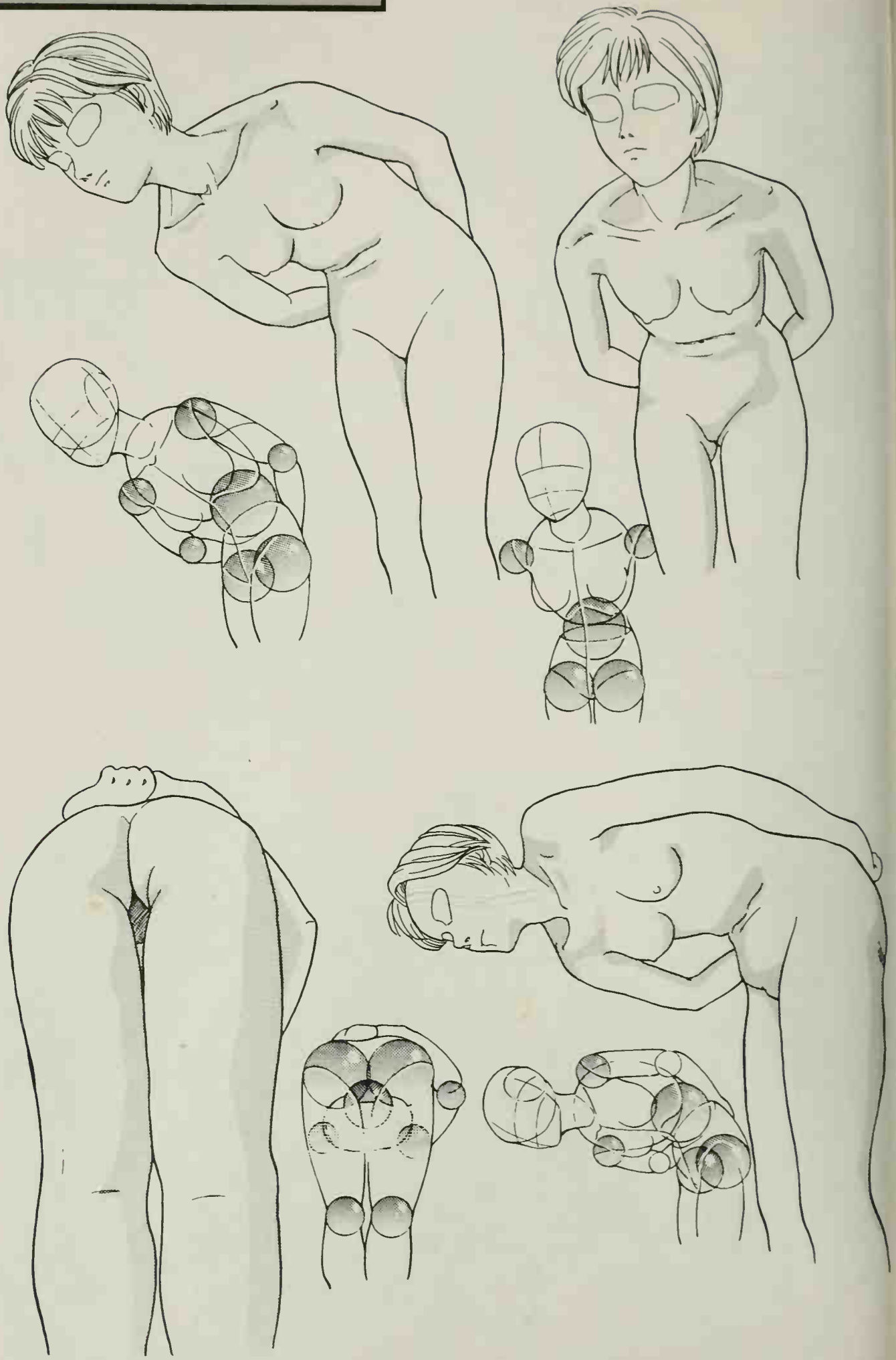


Take a look at the framework of the buttocks.
The lines between the hips and waists should be easy to see.

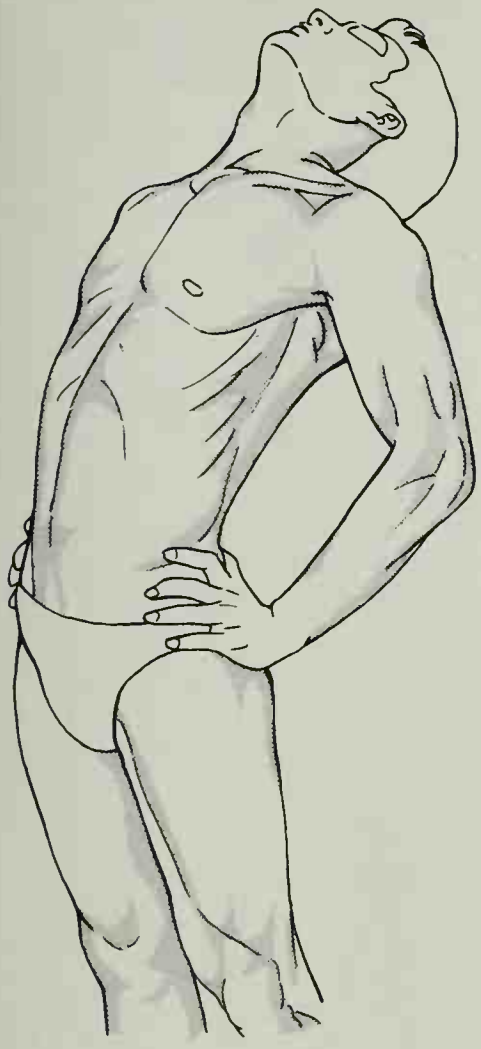


Consider also the hidden abdomen when drawing.

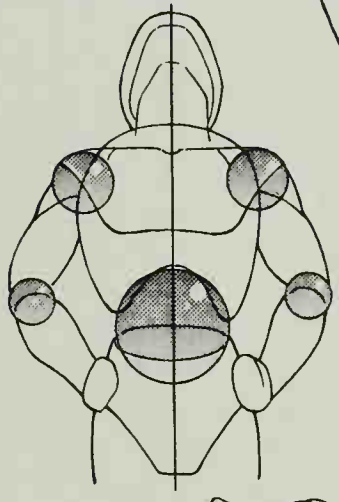
Leaning Forward (Female) - Part 2

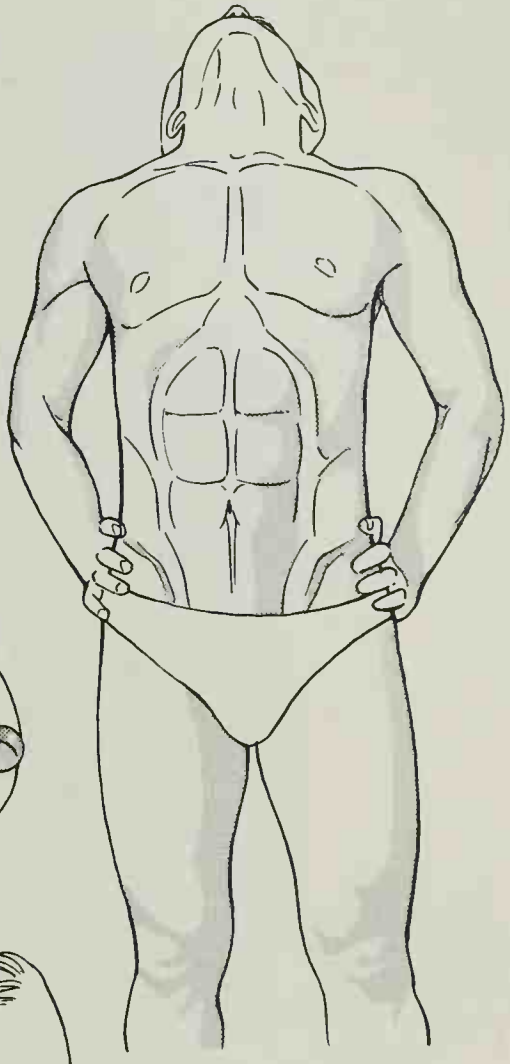


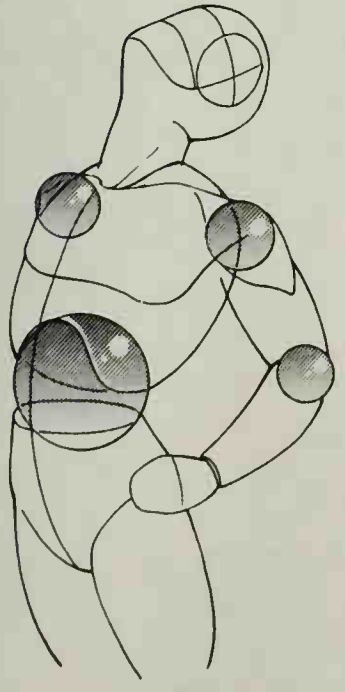
Bending Backward (Male)

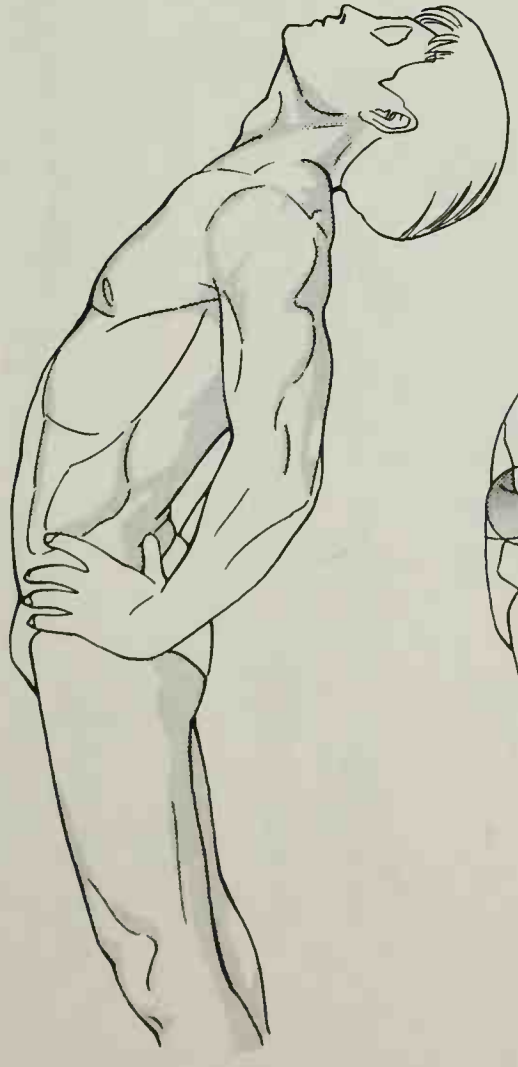


The shoulders move toward the back and the chest expands.

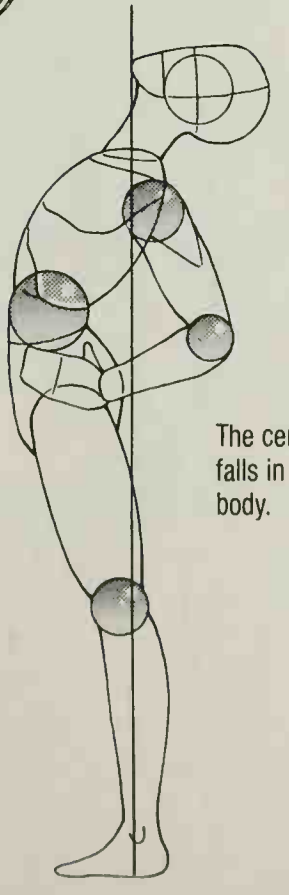






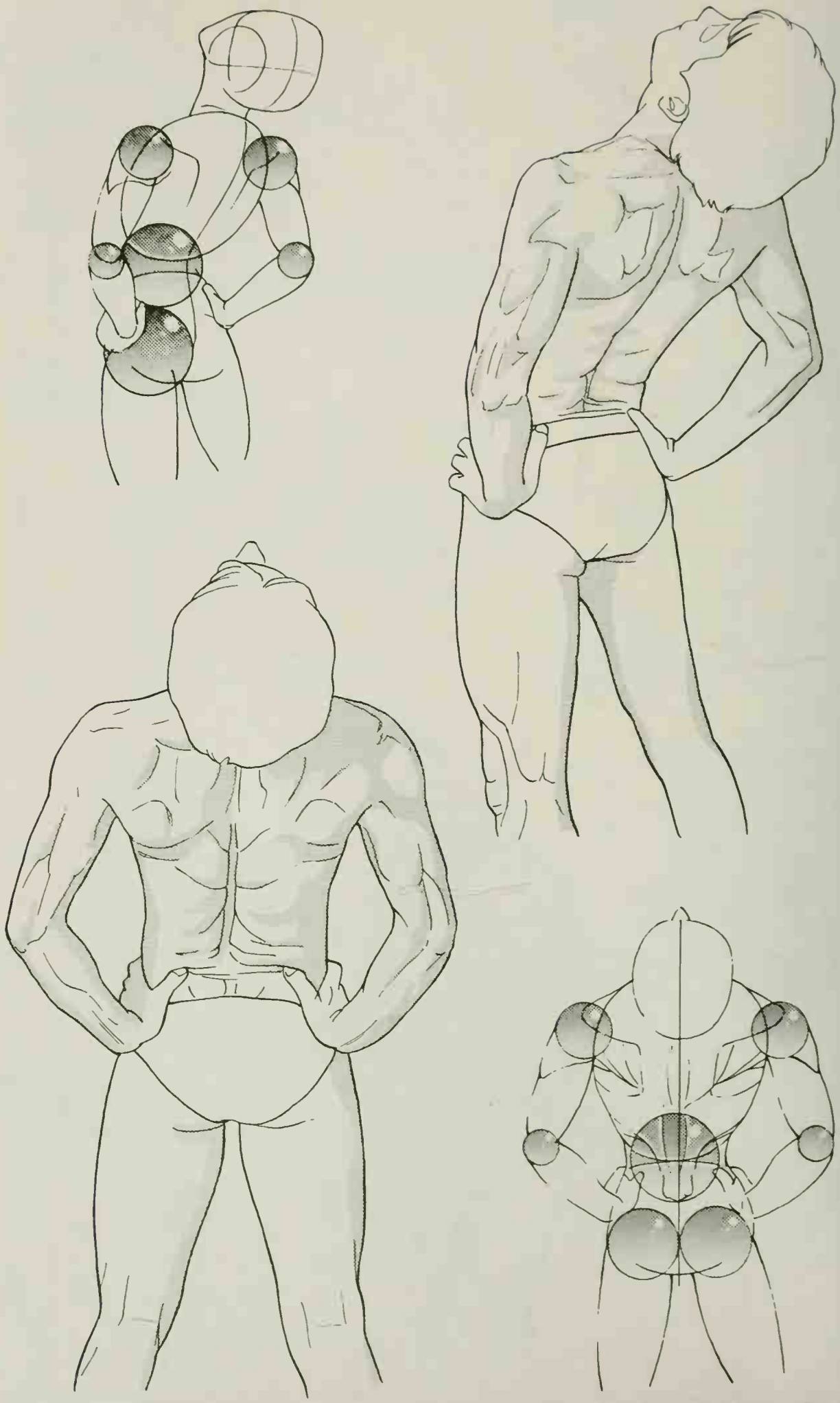


Center of gravity

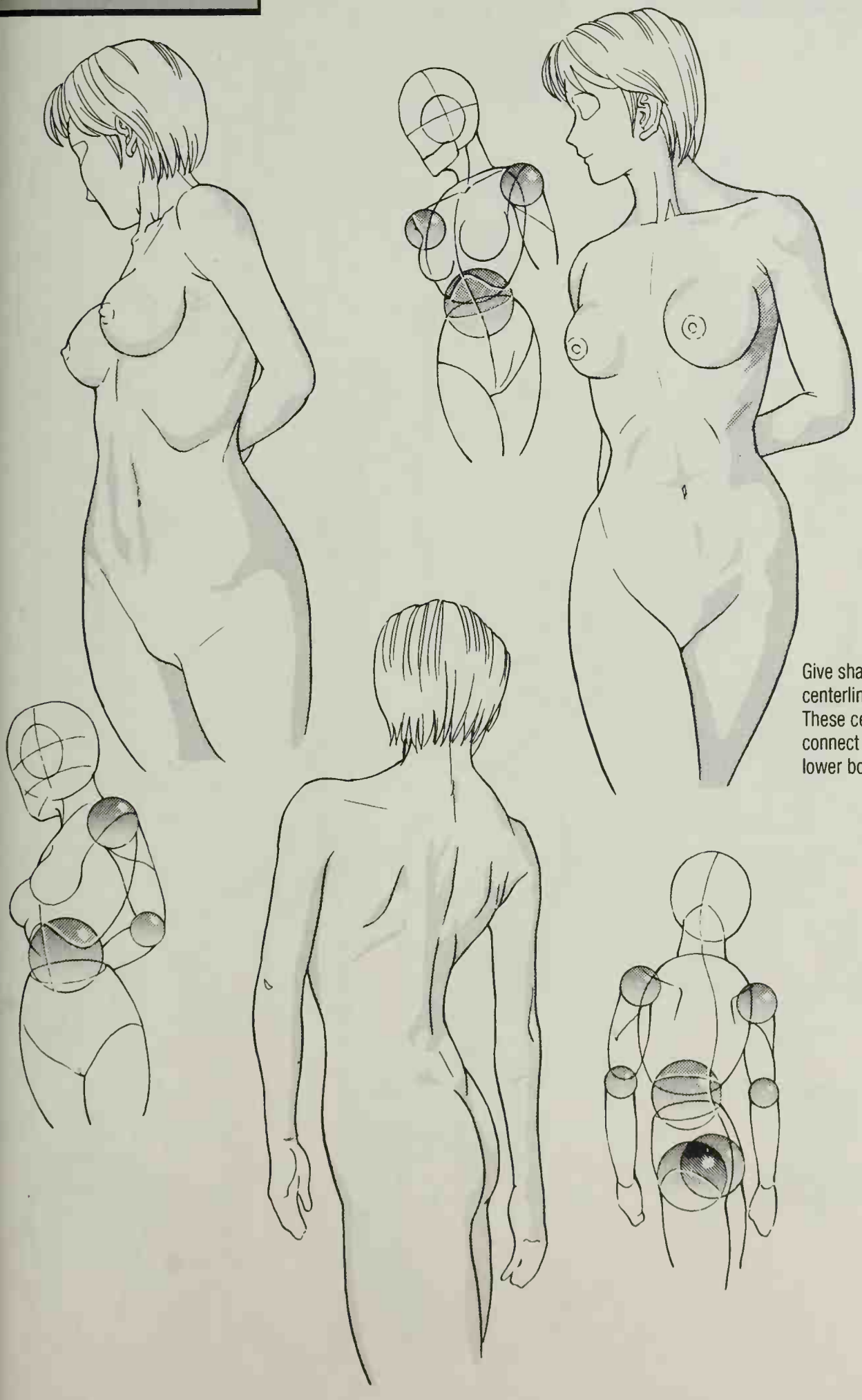


The center of gravity falls in the center of the body.

Bending Backward (Male) - Part 2

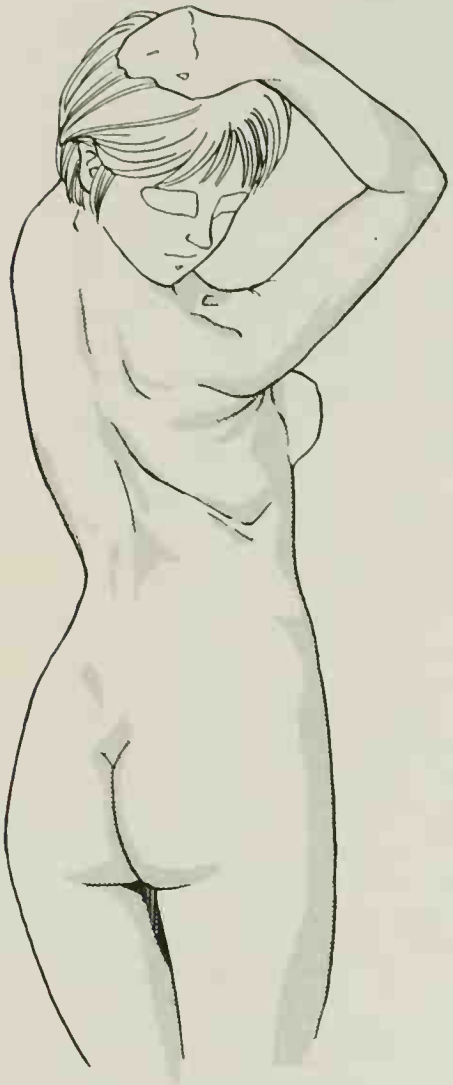


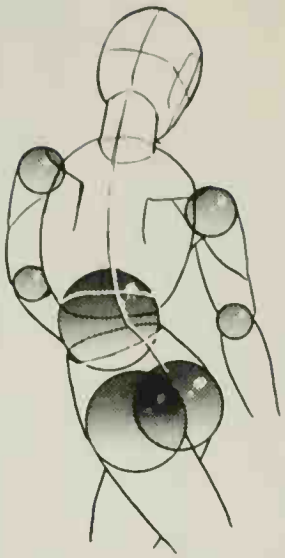
Twisting (Female)

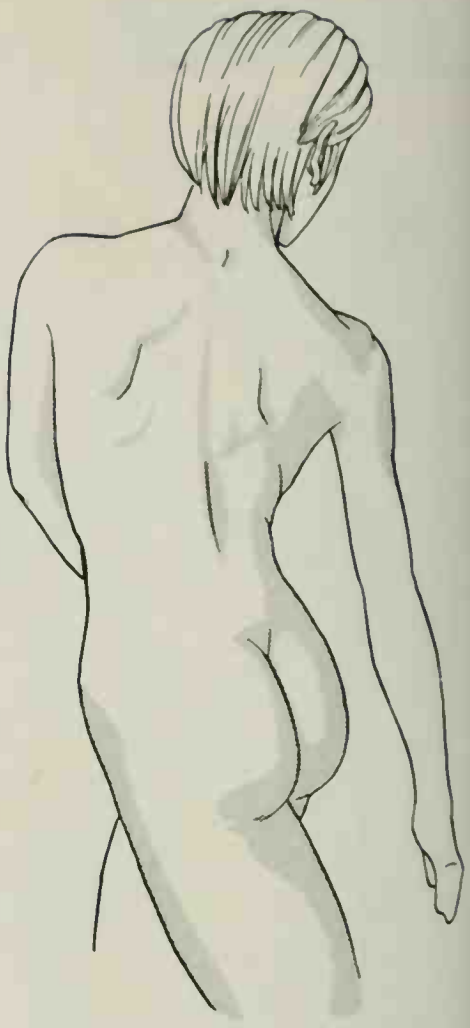


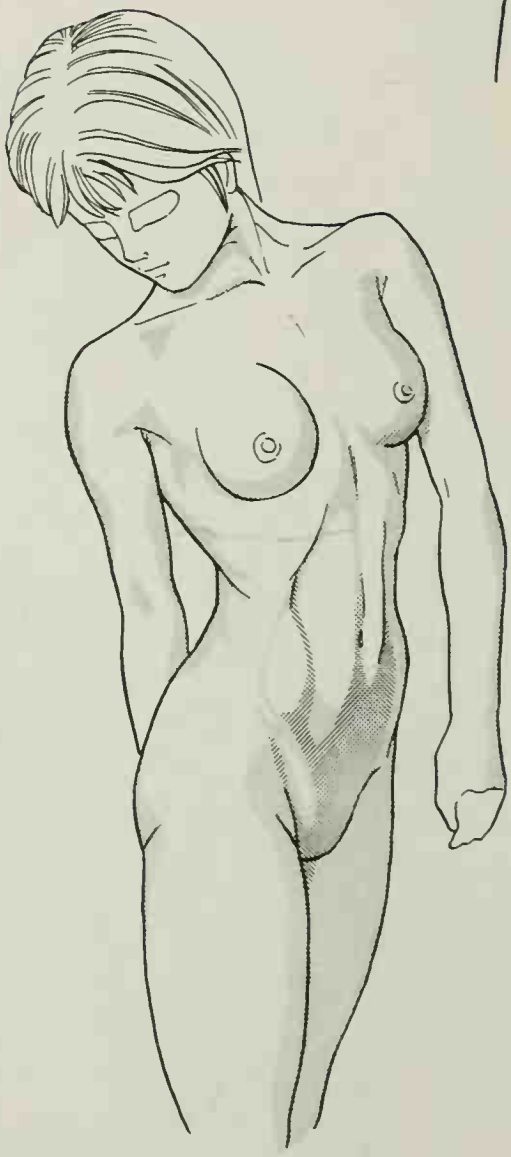
Give shape to the centerline of the body. These centerlines also connect the upper and lower body.

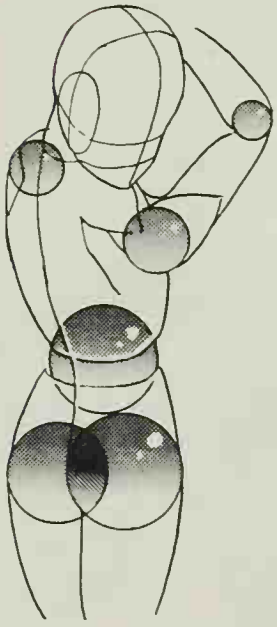
Twisting (Female) - Part 2

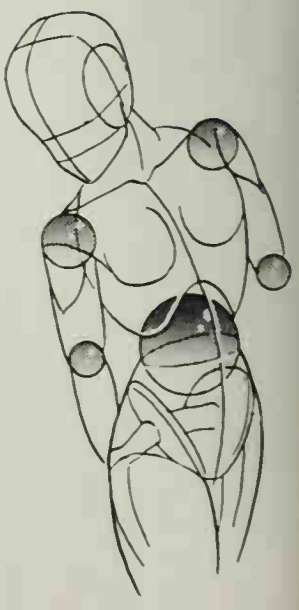


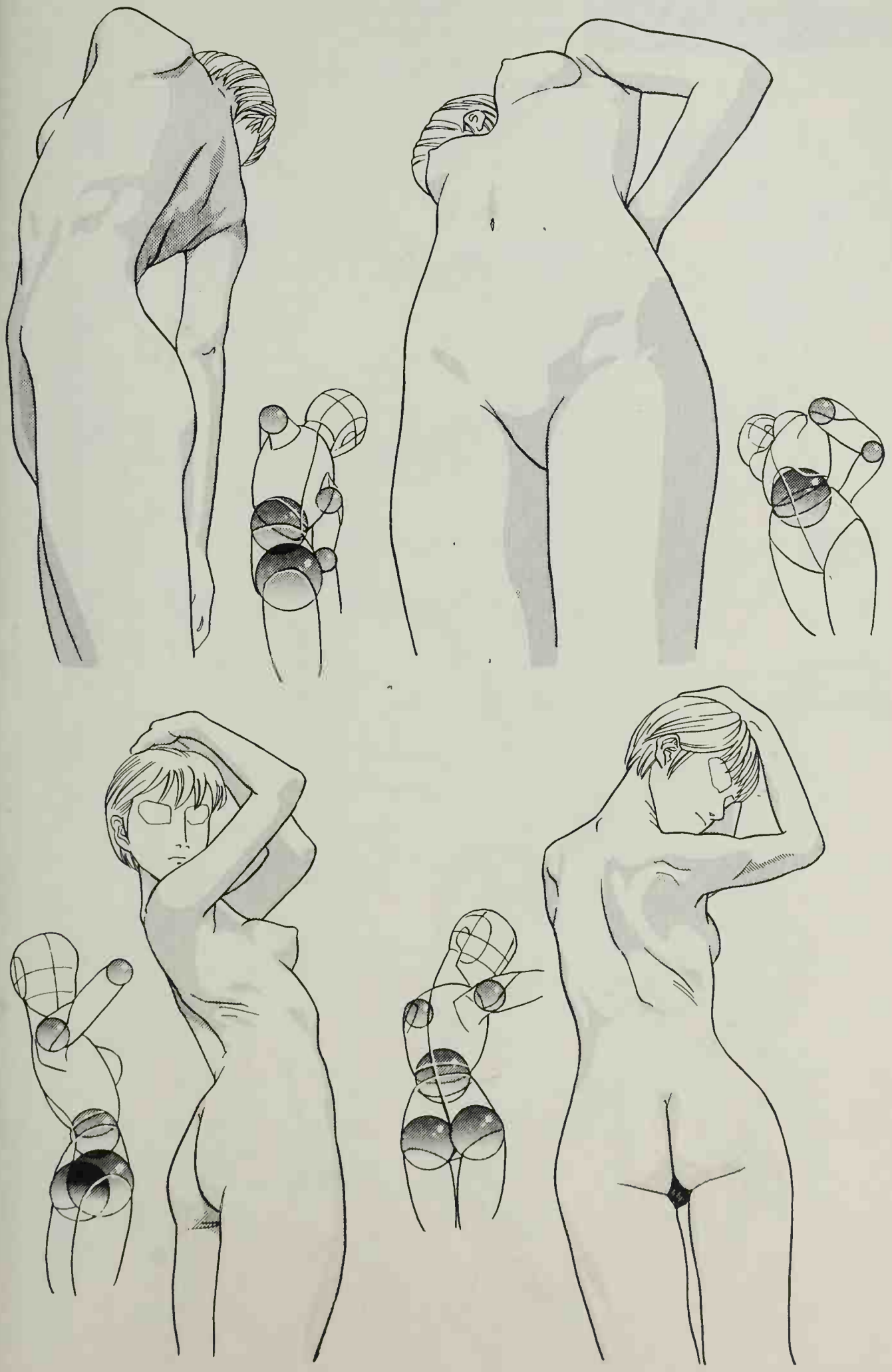






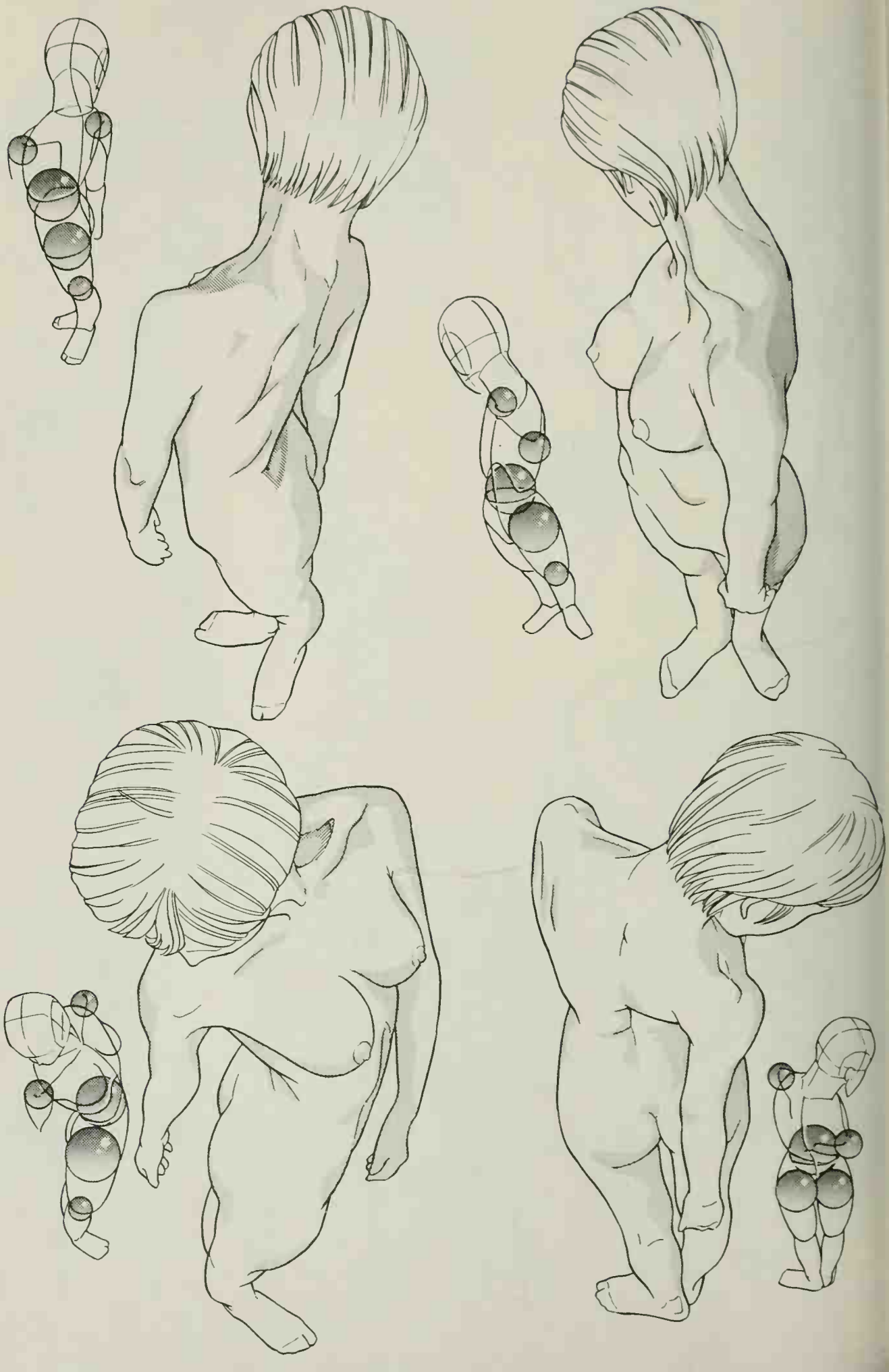




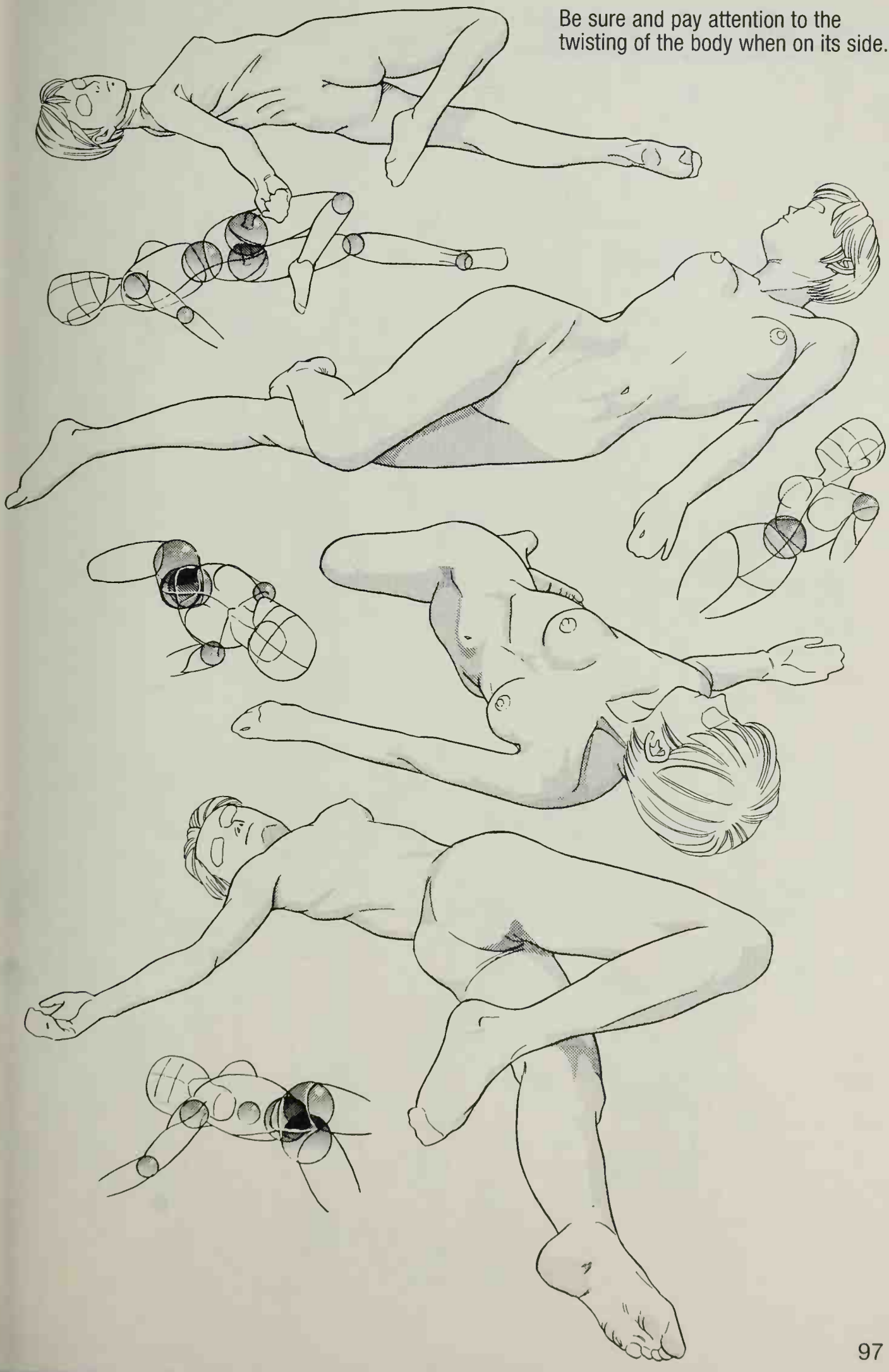


Twisting (Female) - Part 3

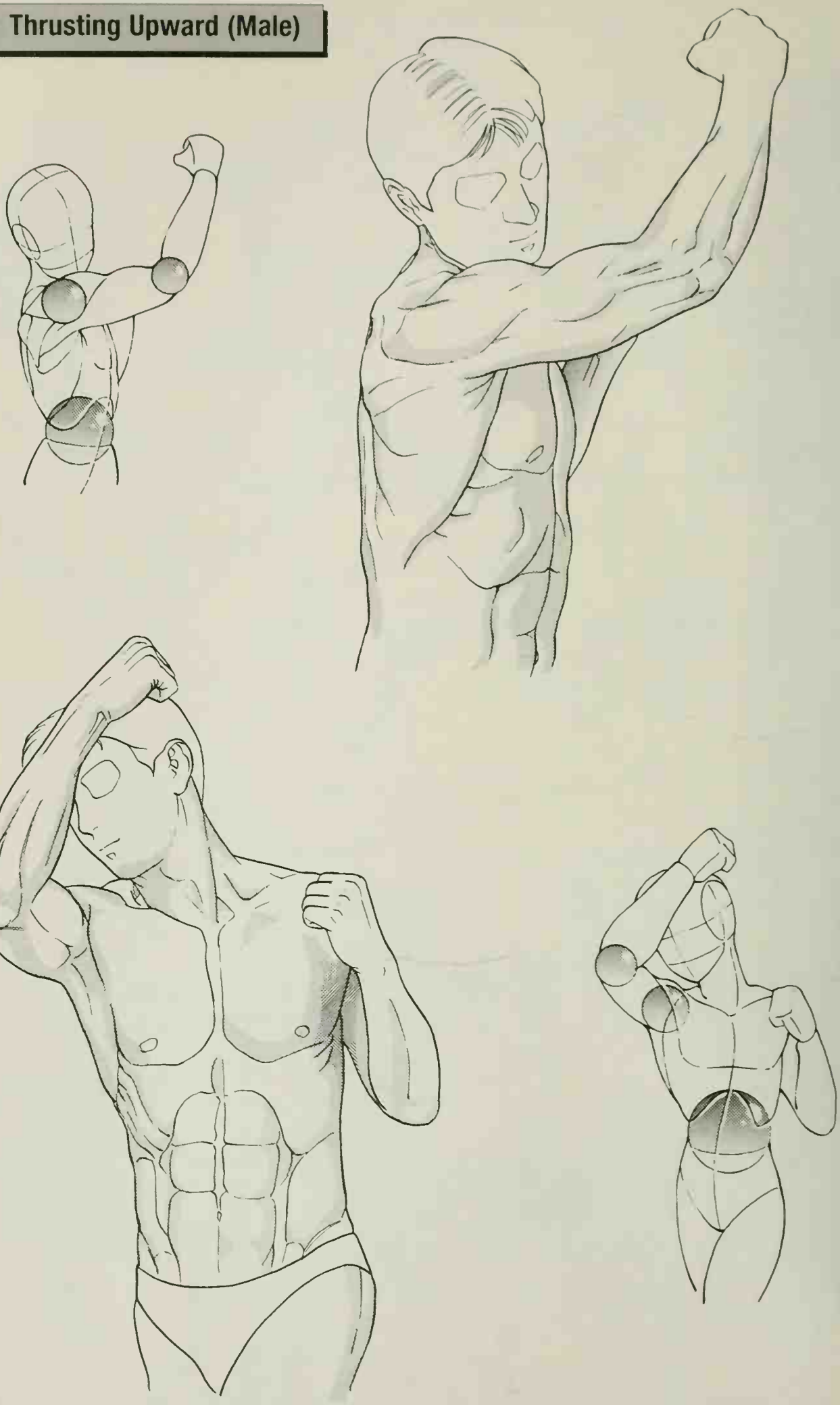
Check the perspective when viewing characters from above.

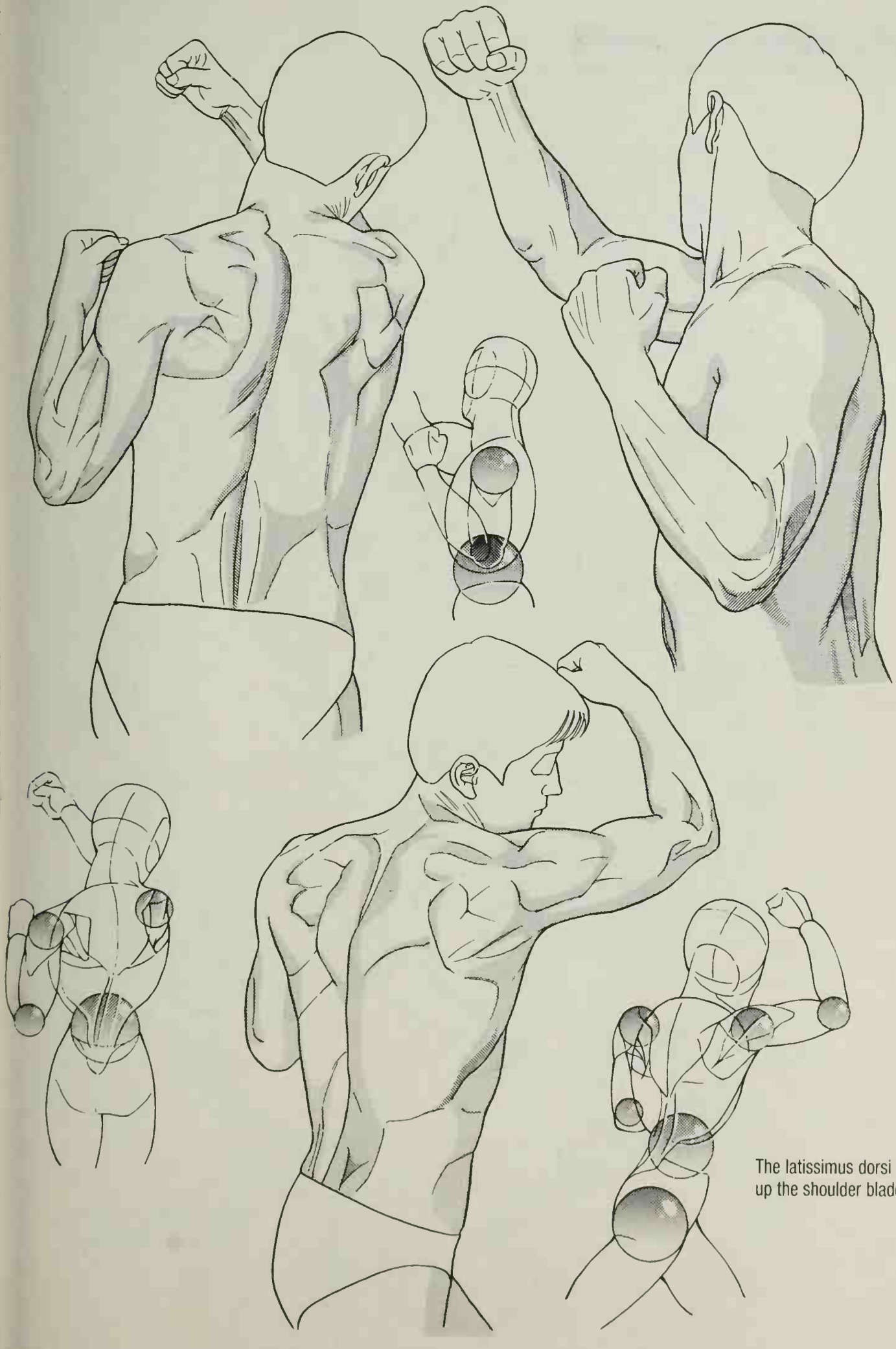


Be sure and pay attention to the twisting of the body when on its side.



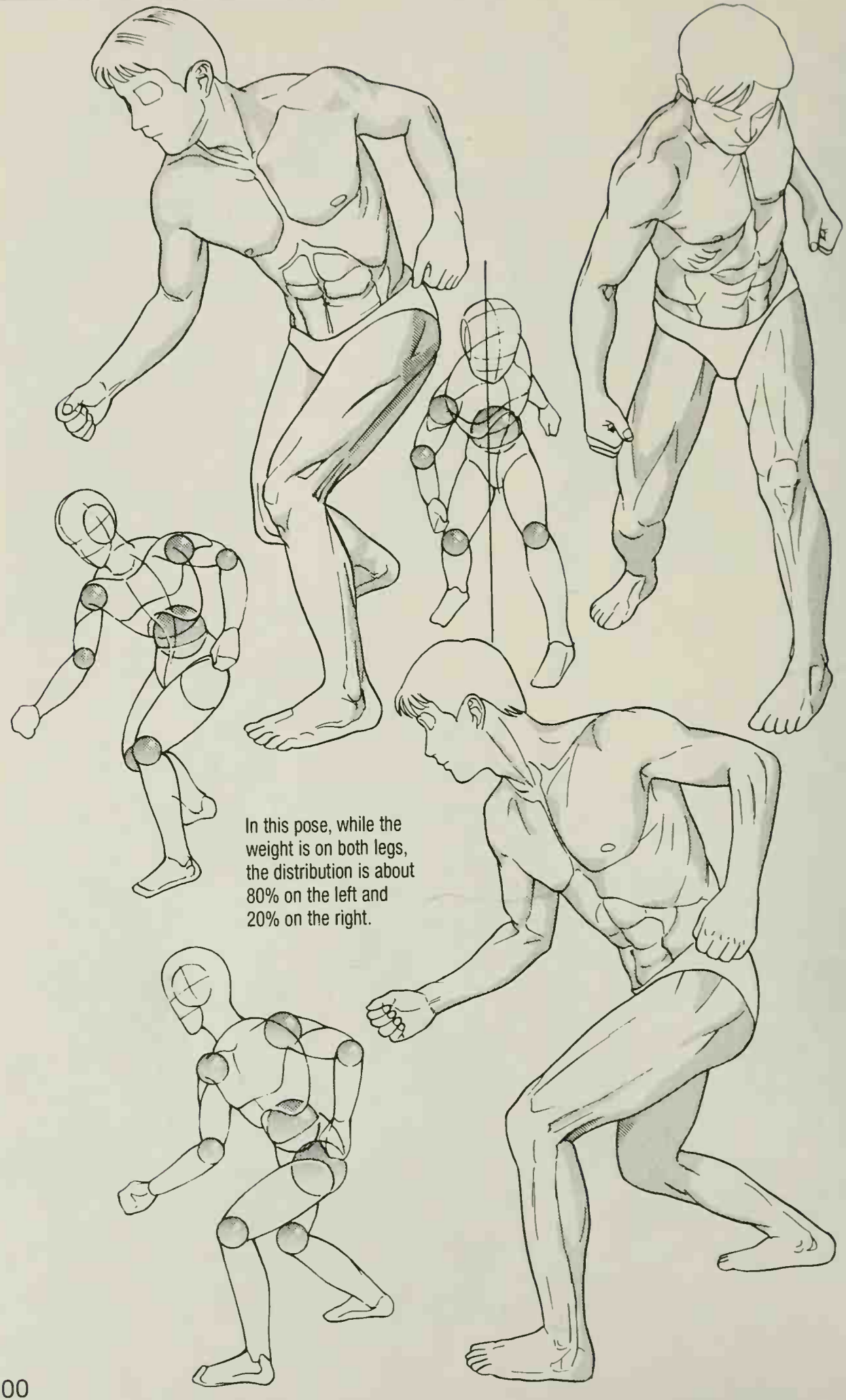
Arm Thrusting Upward (Male)





The latissimus dorsi lifts up the shoulder blade.

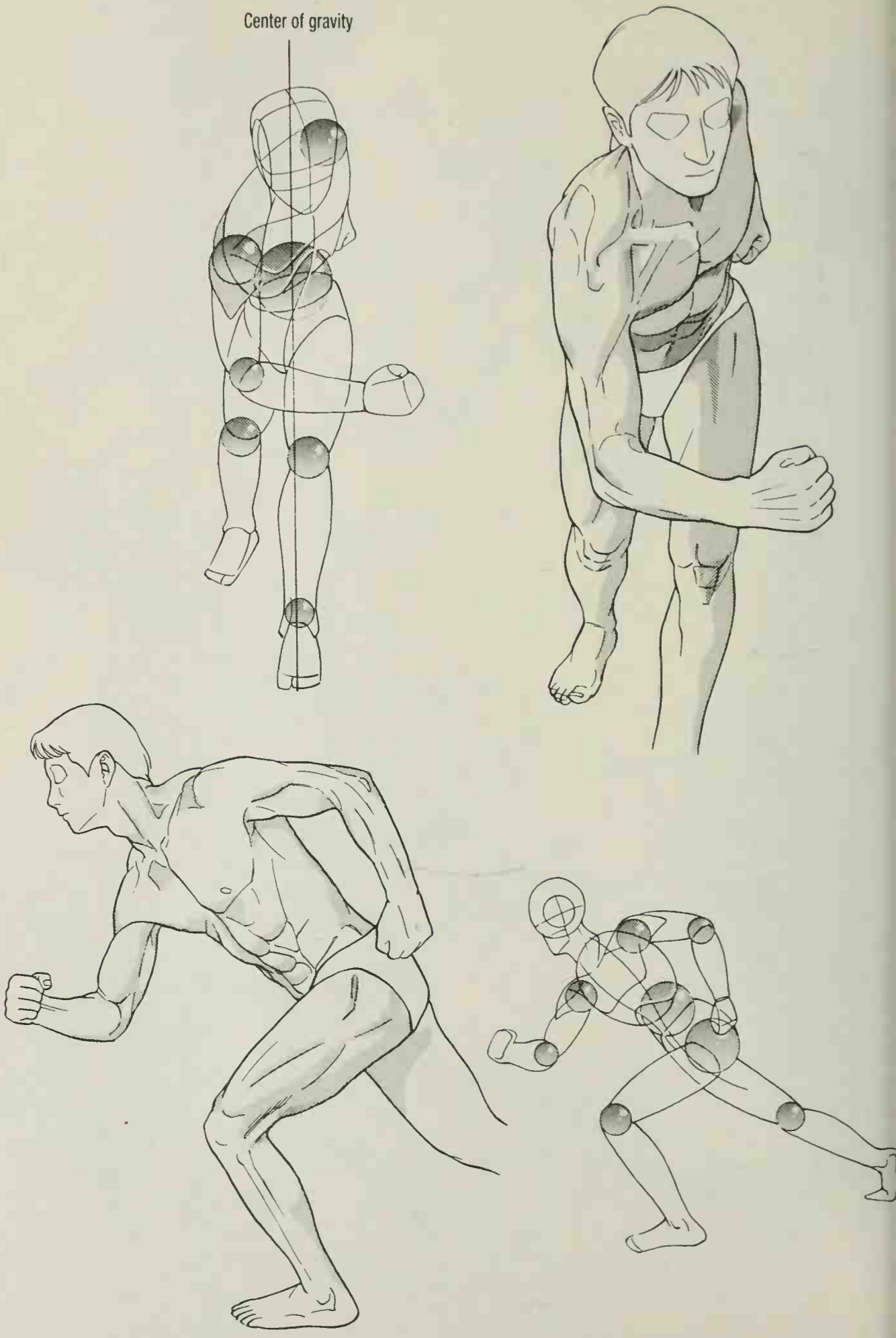
Standing Variations (Male)

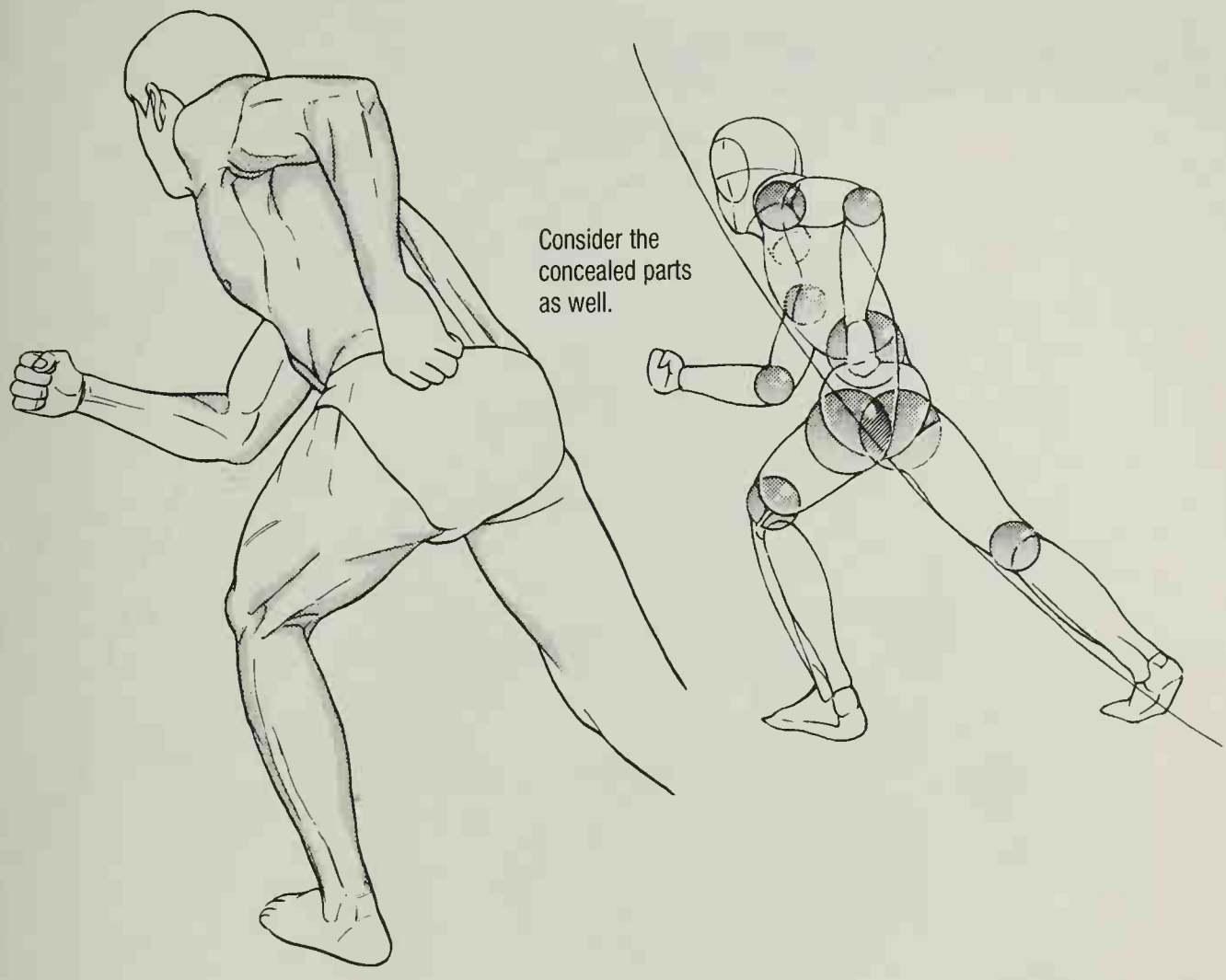


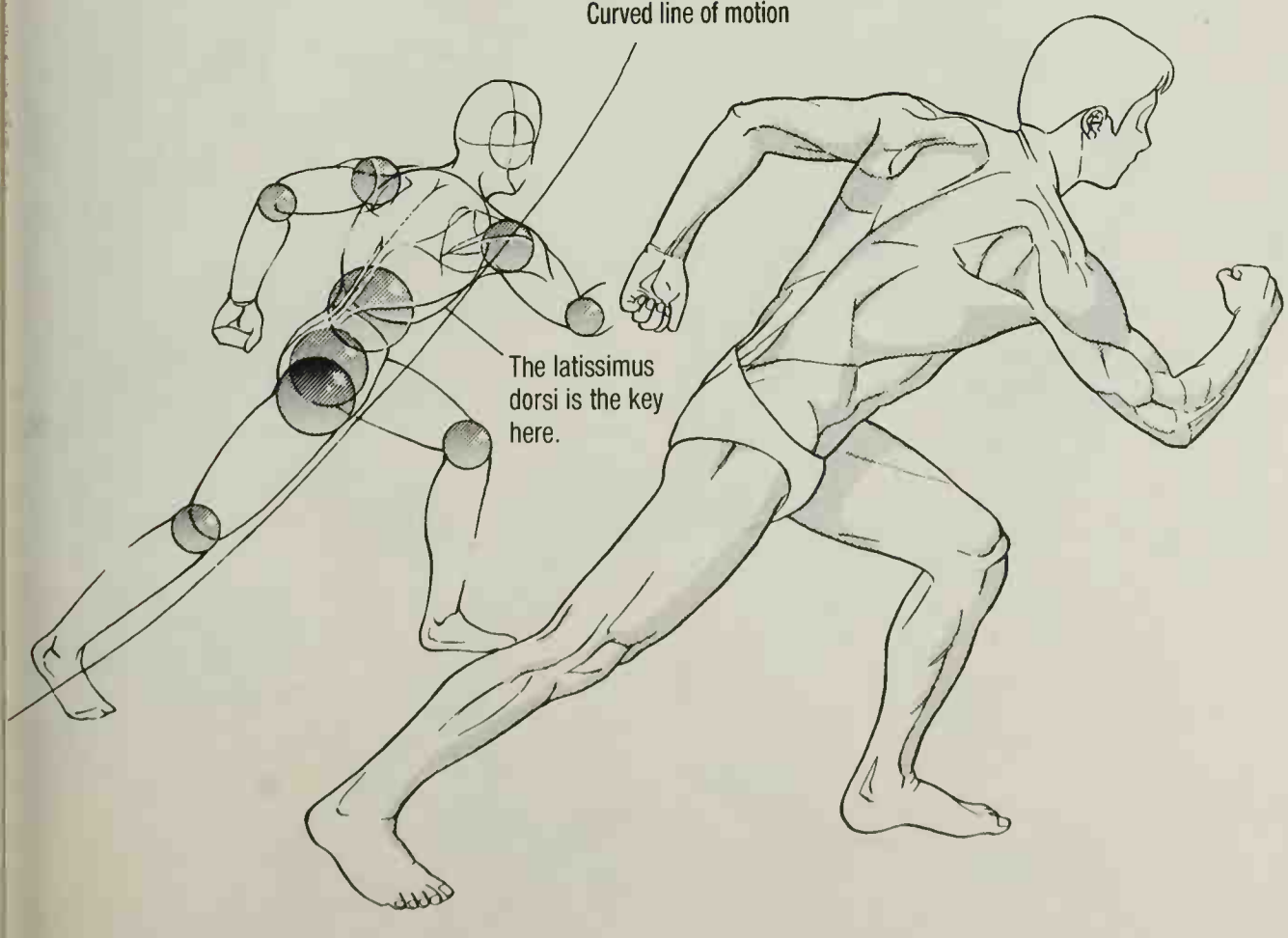
In this pose, while the weight is on both legs, the distribution is about 80% on the left and 20% on the right.

Be aware of the ground
and consider the figure.

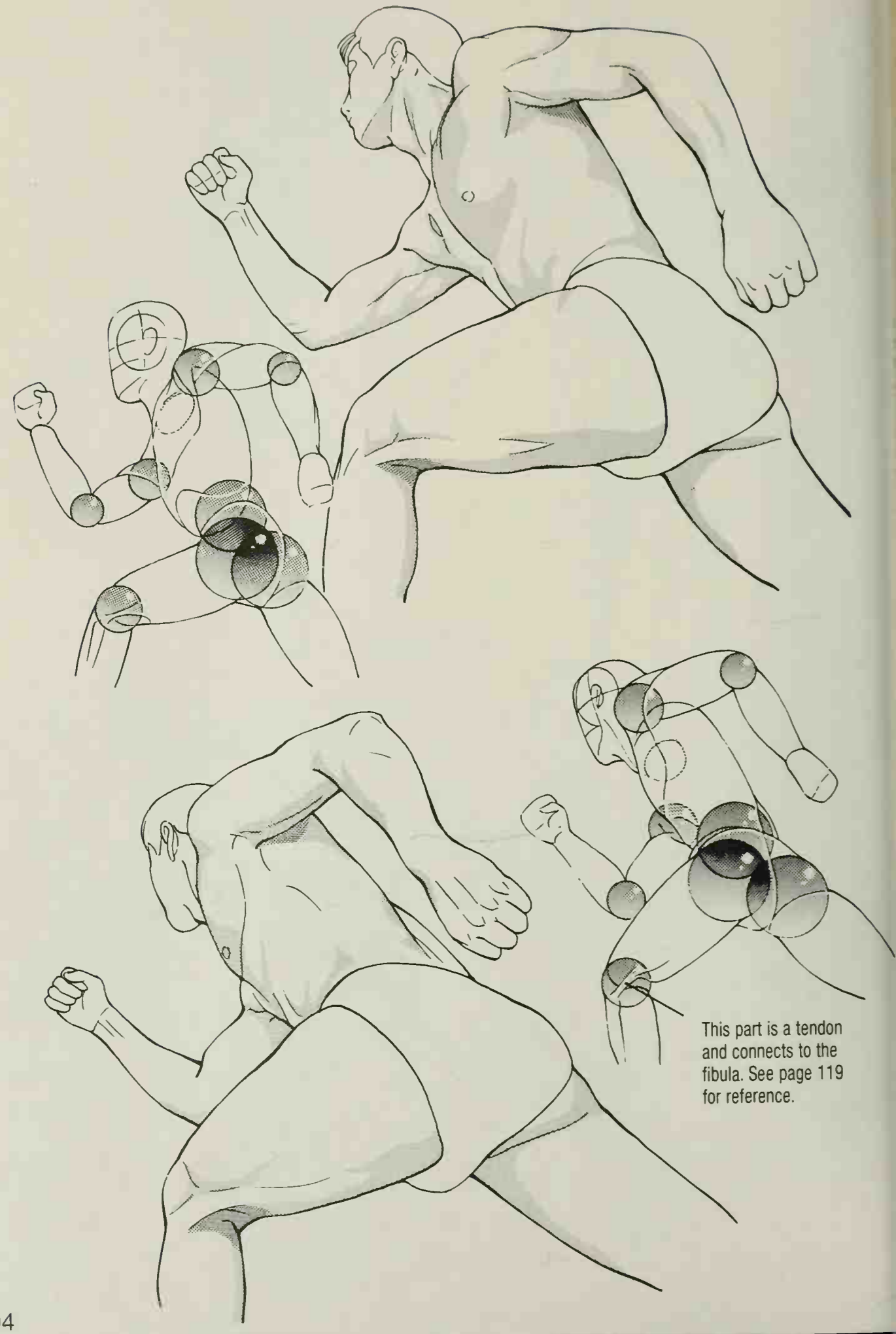
Running and Twisting (Male)



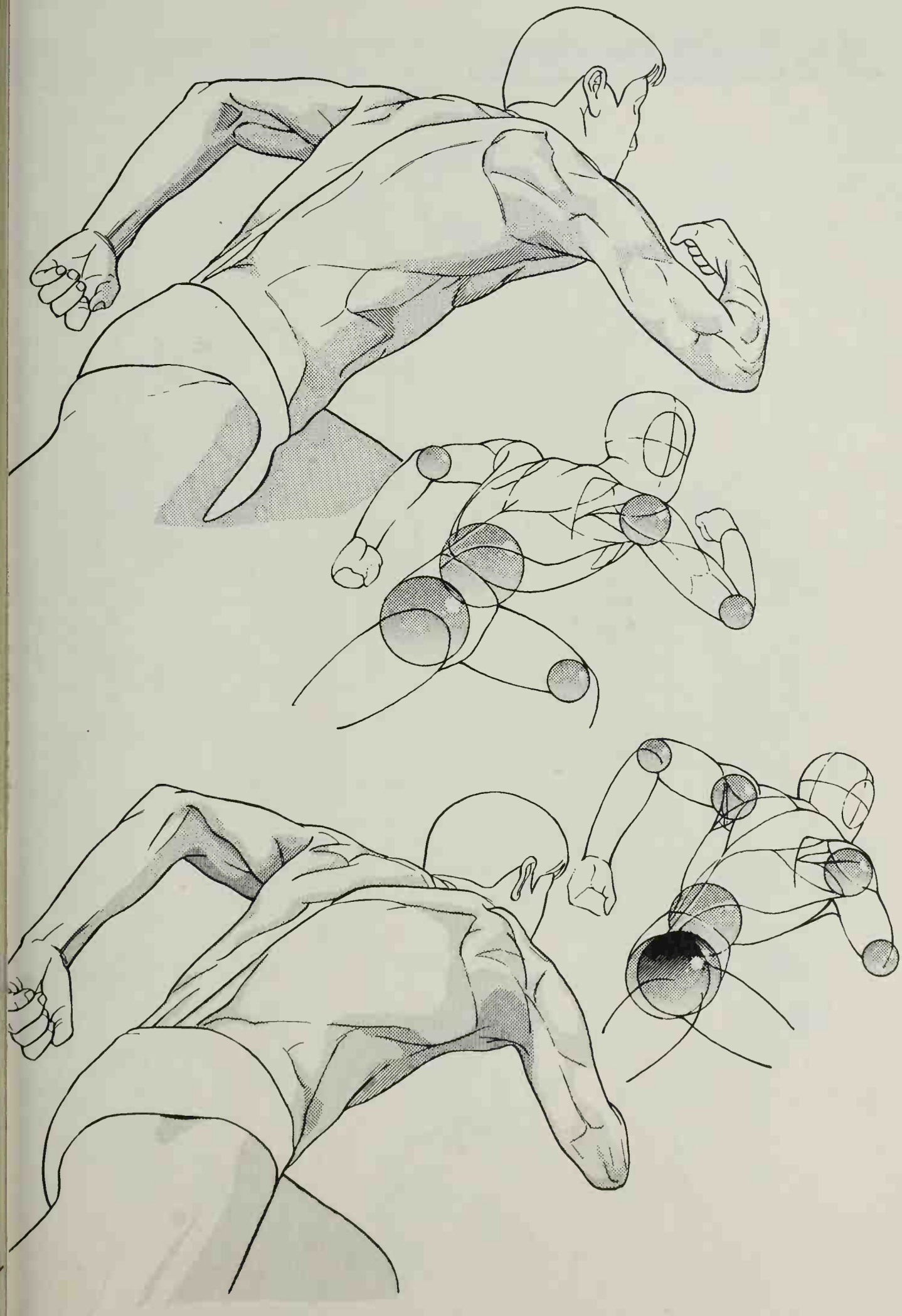

Consider the
concealed parts
as well.


Curved line of motion
The latissimus
dorsi is the key
here.

Running and Twisting (Male) - Part 2

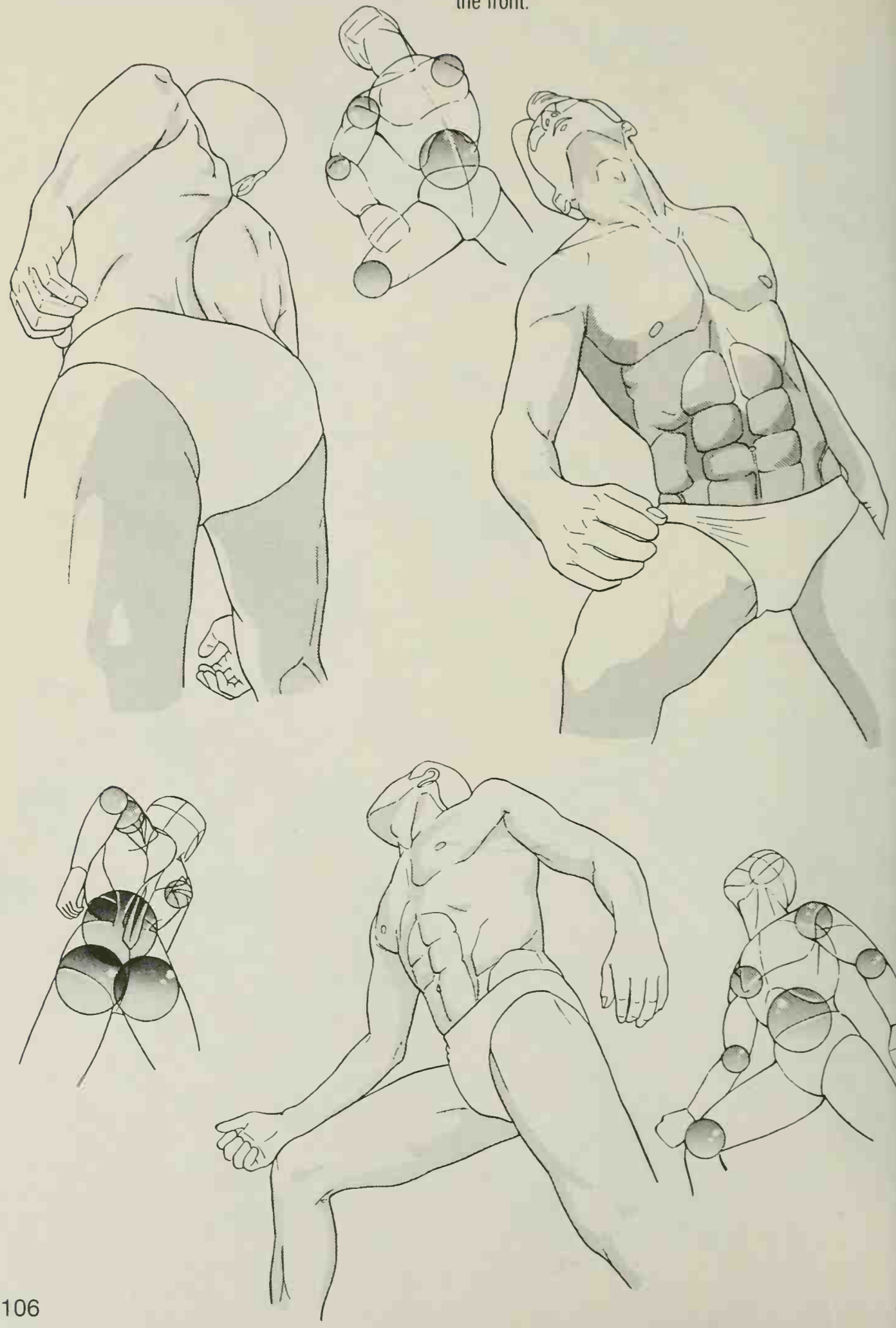


This part is a tendon and connects to the fibula. See page 119 for reference.

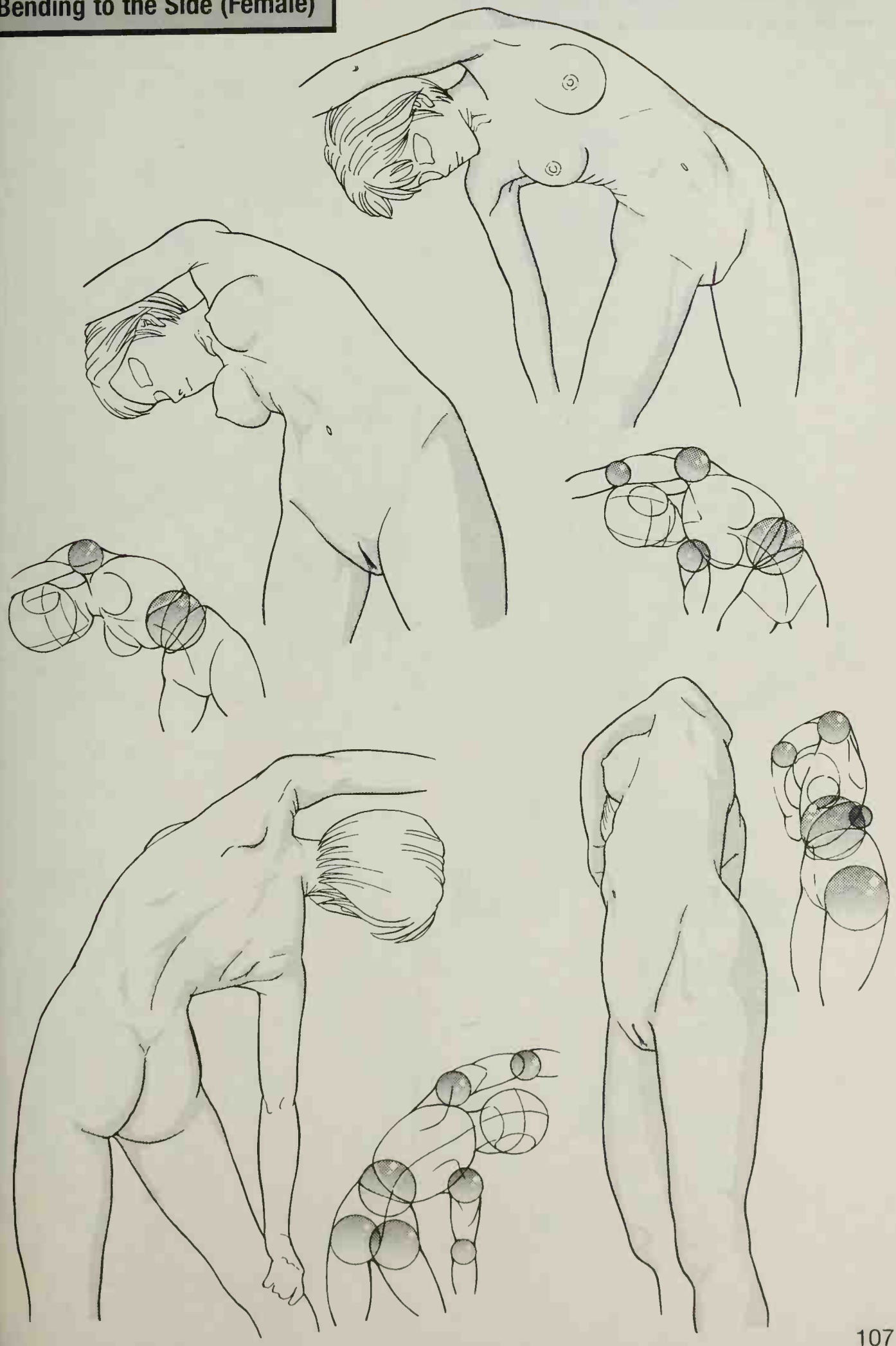


Looking Up at a Low Angle (Male)

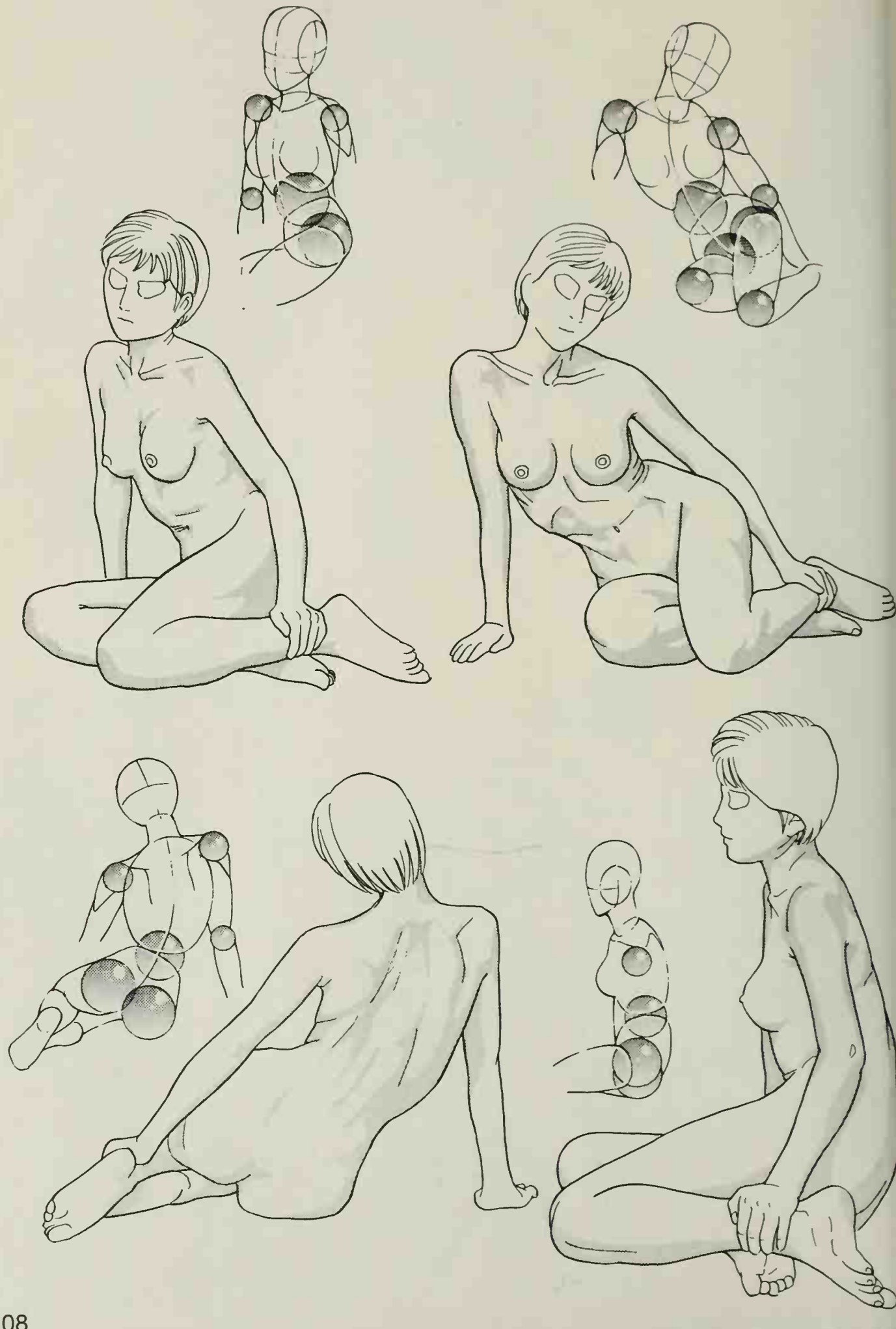
When viewed from below, be aware of the differences in the chest and sides as compared to when viewed from the front.

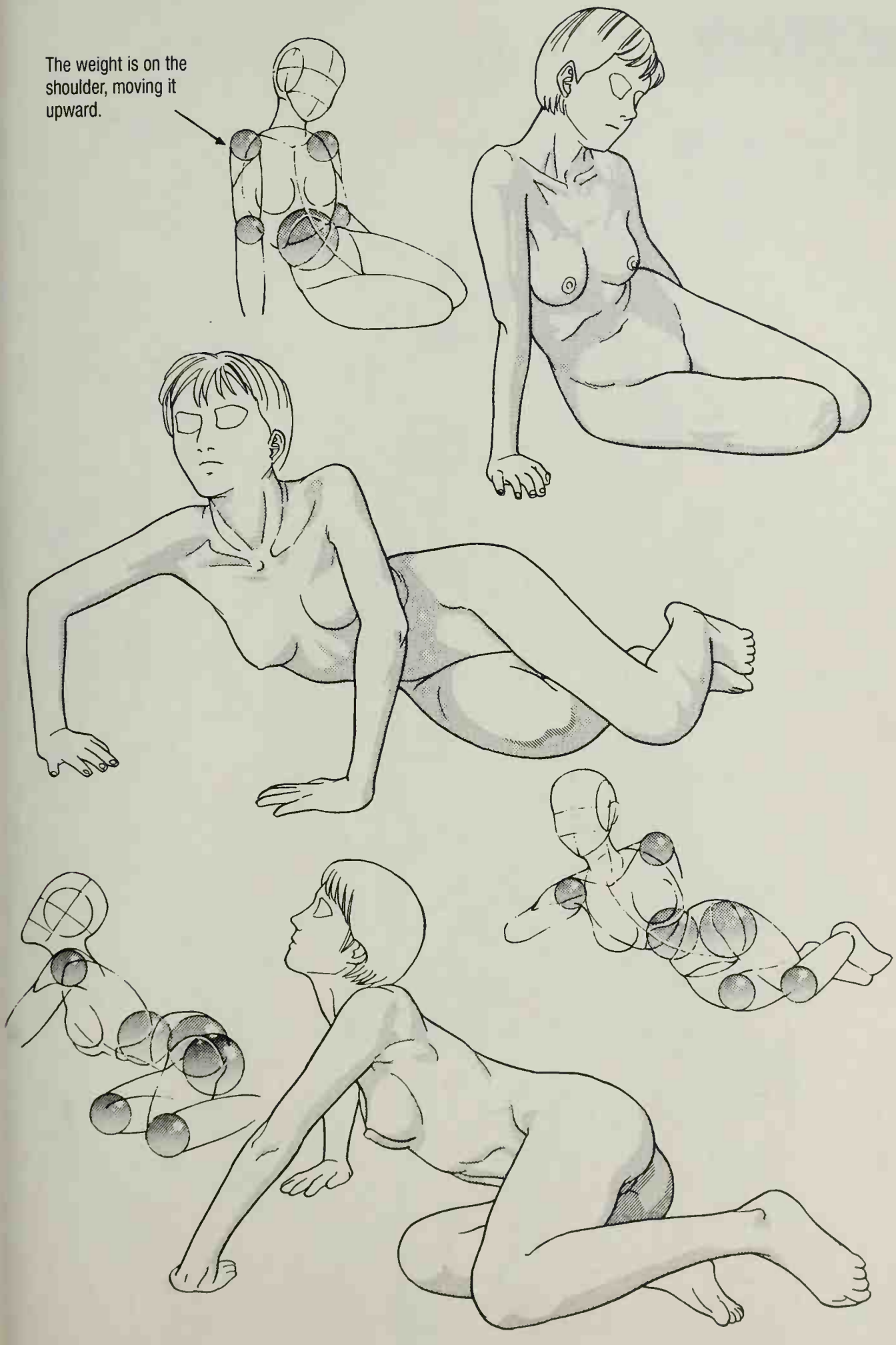


Bending to the Side (Female)

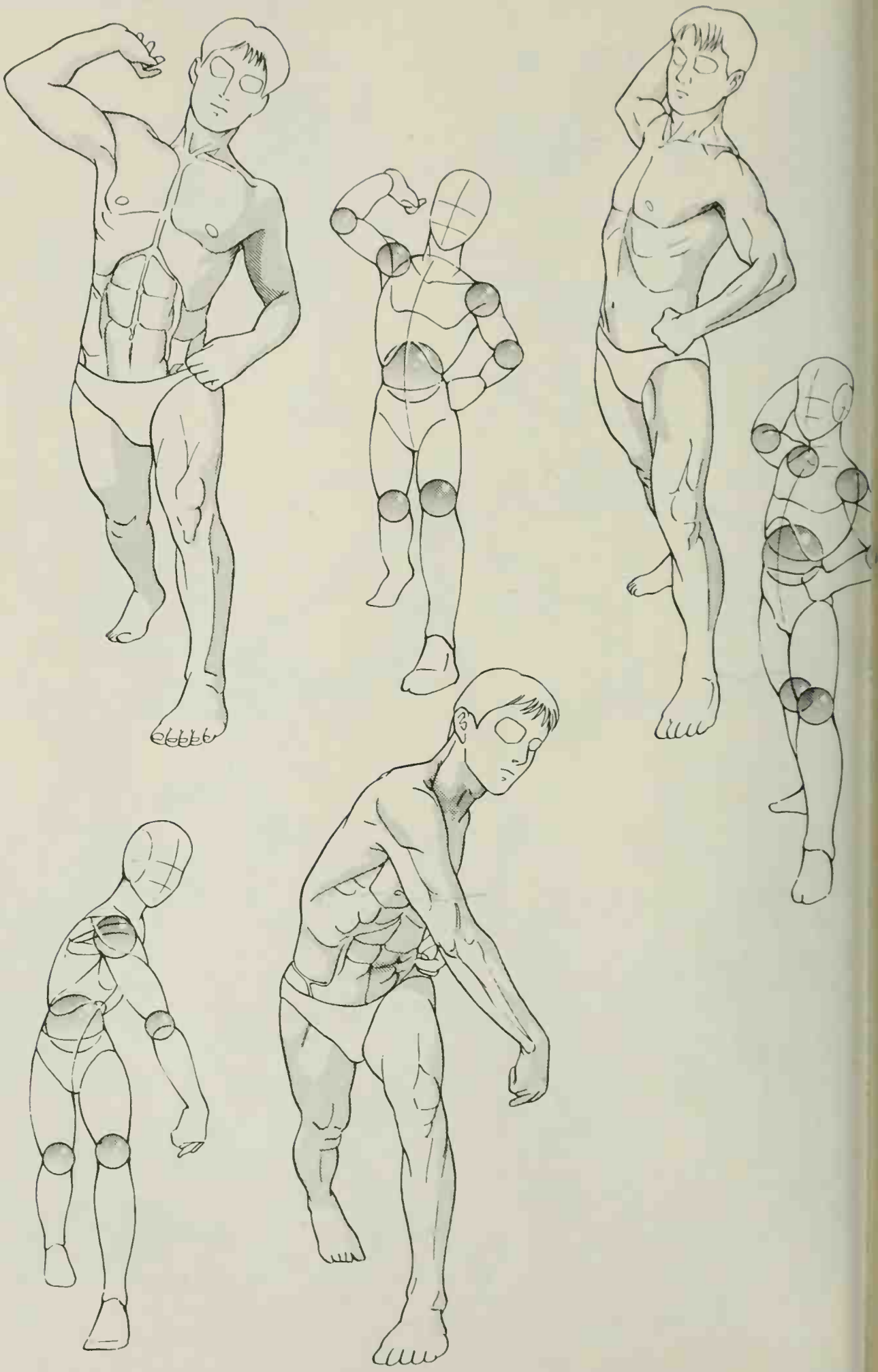


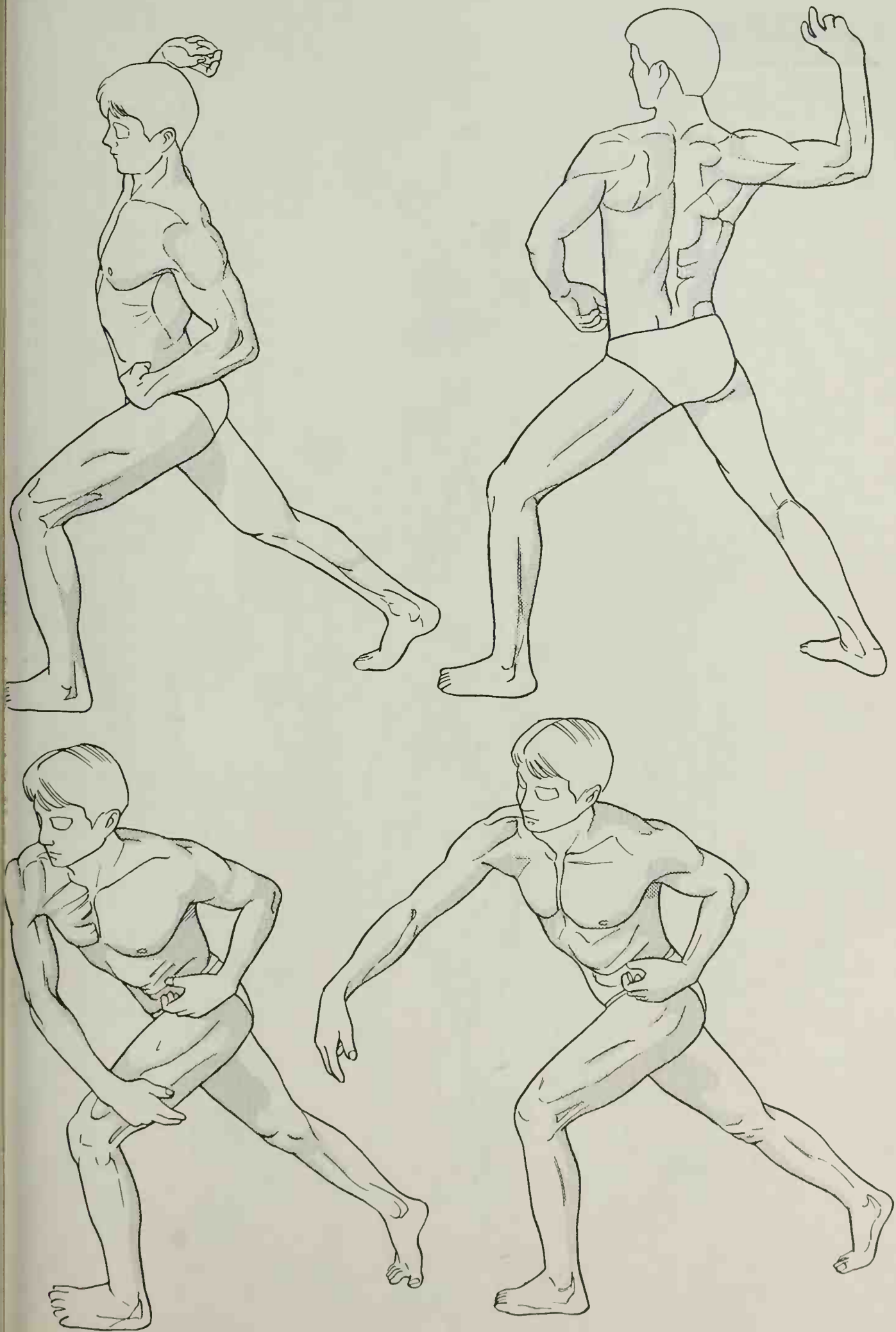
Bending to the Side (Female) - Part 2



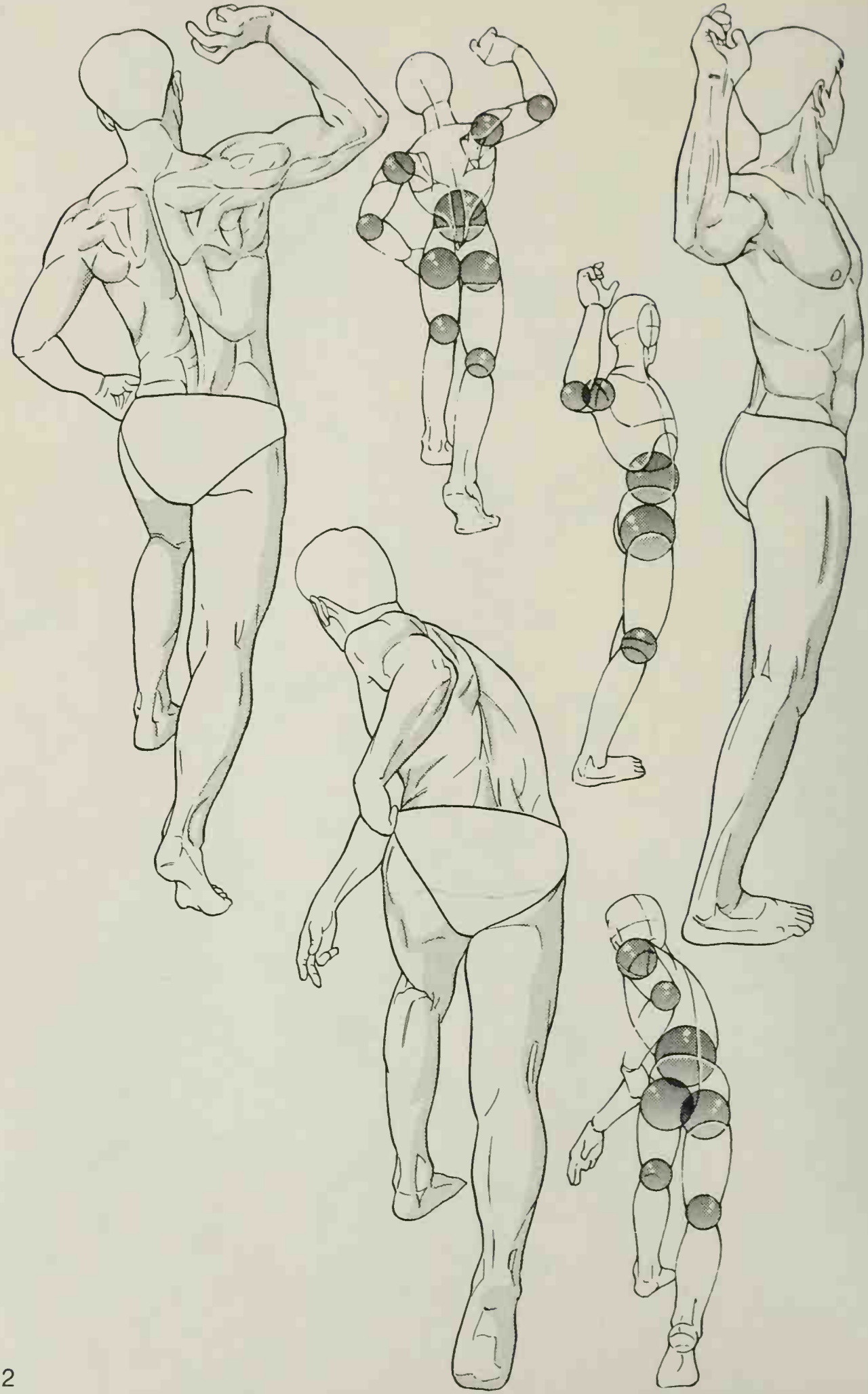

The weight is on the shoulder, moving it upward.

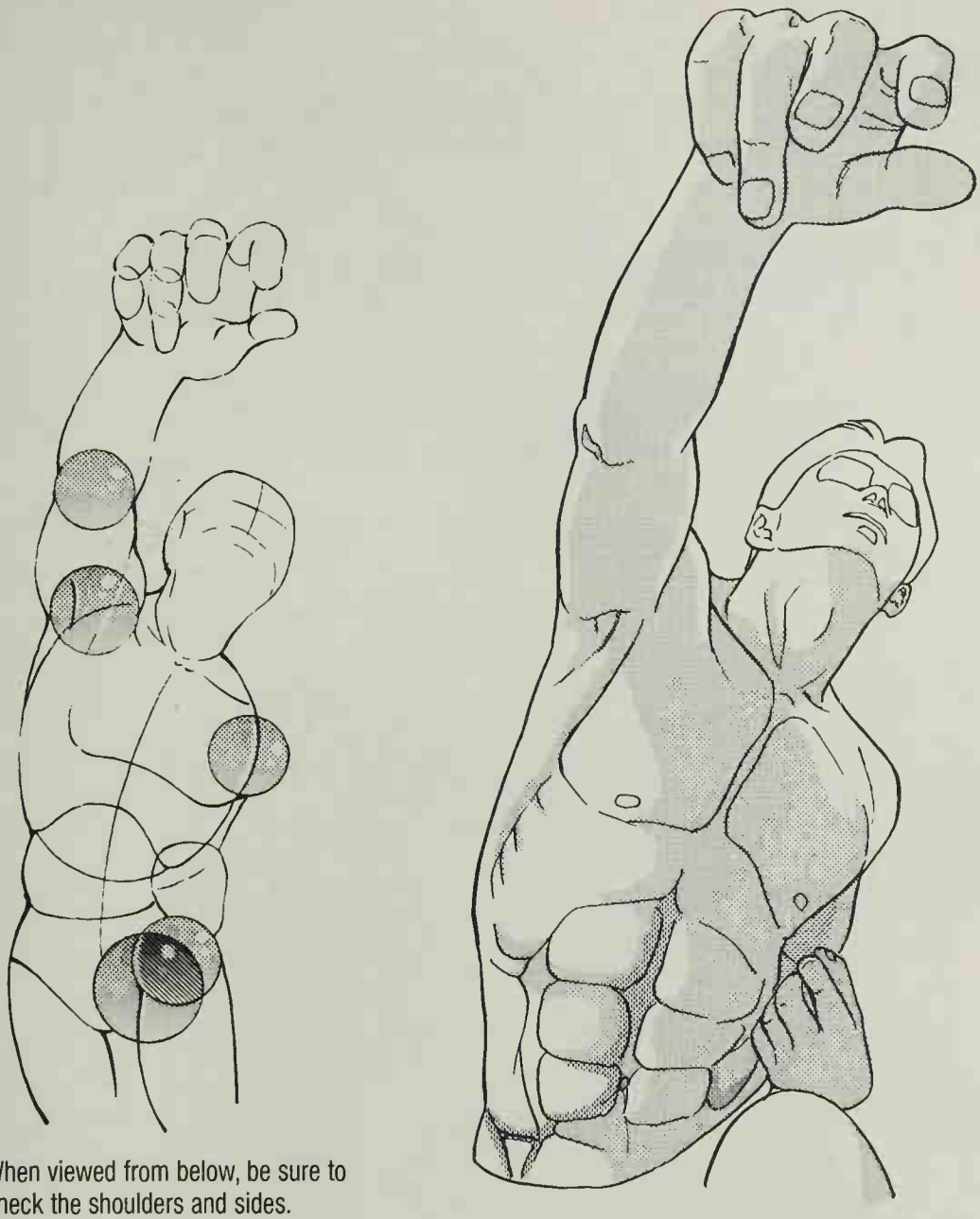
Throwing (Male)



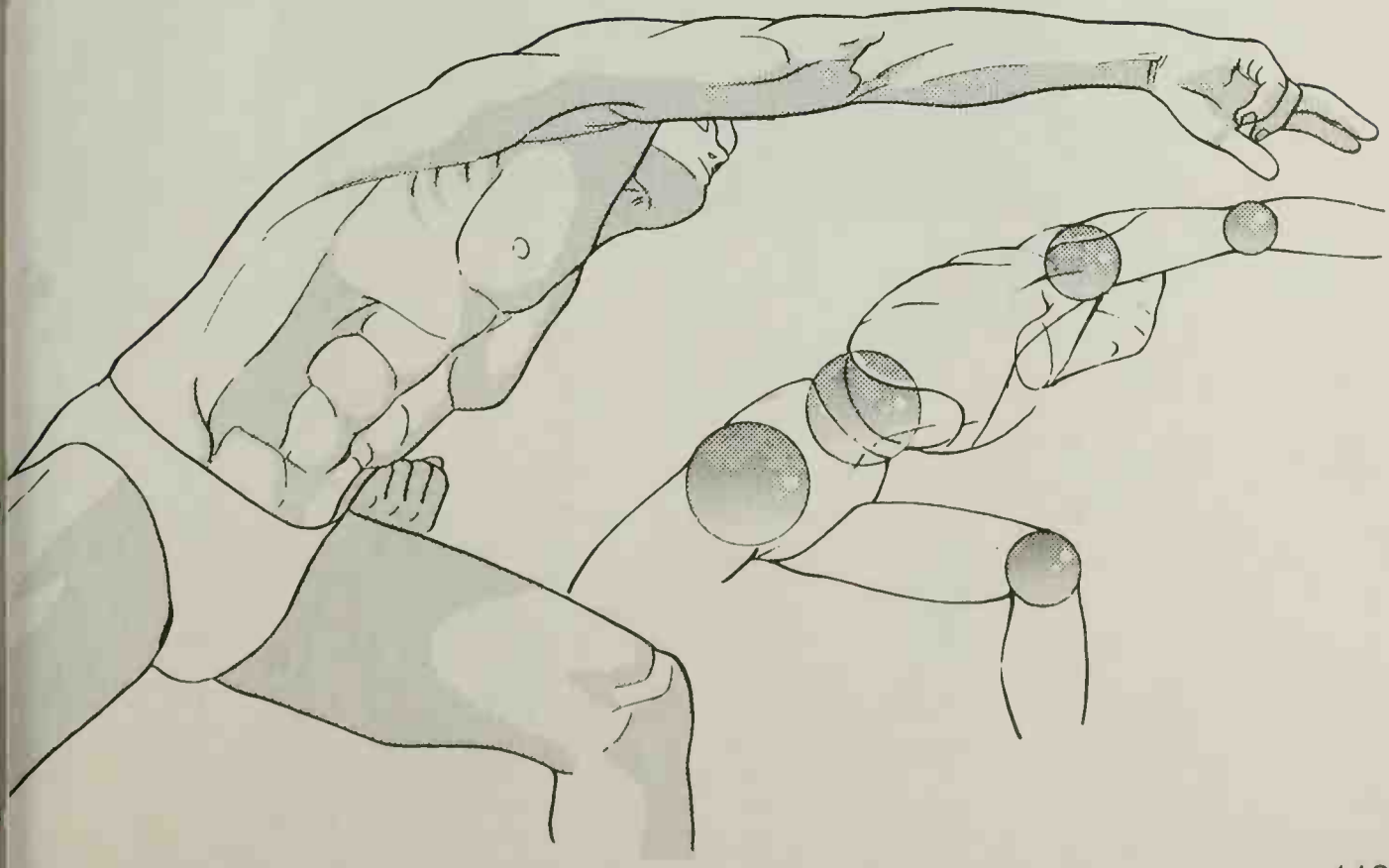


Throwing (Male) - Part 2

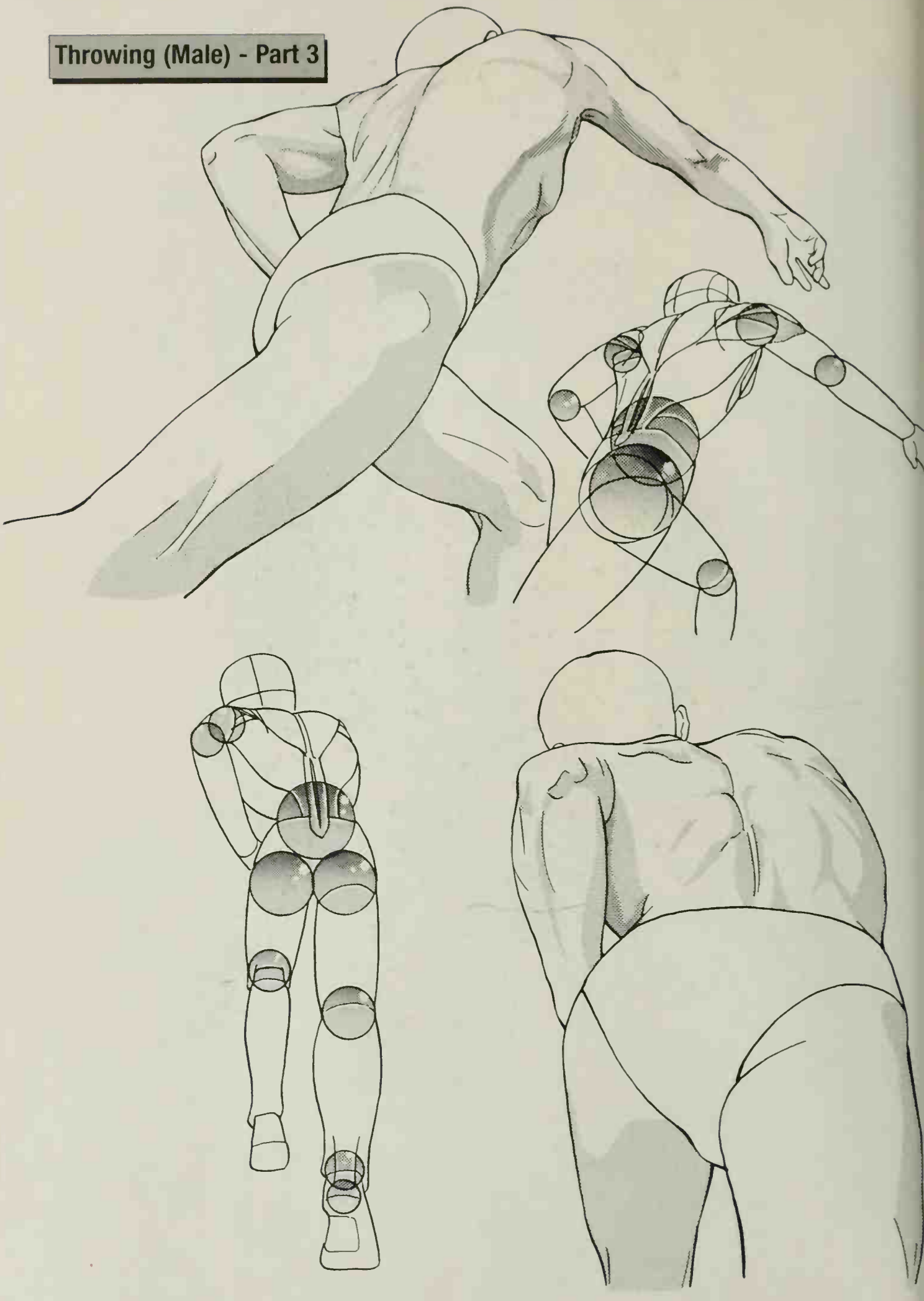




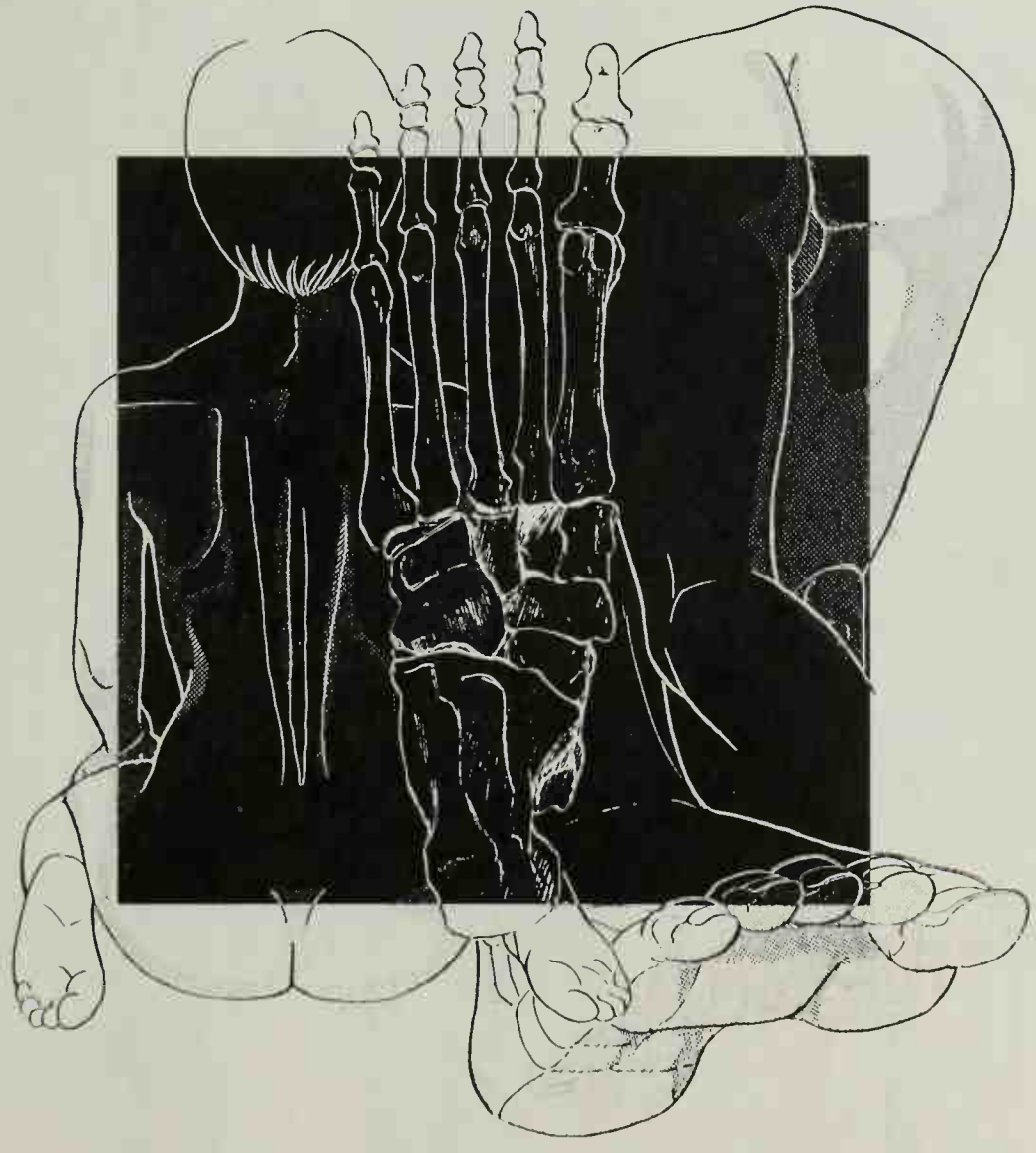
When viewed from below, be sure to check the shoulders and sides.



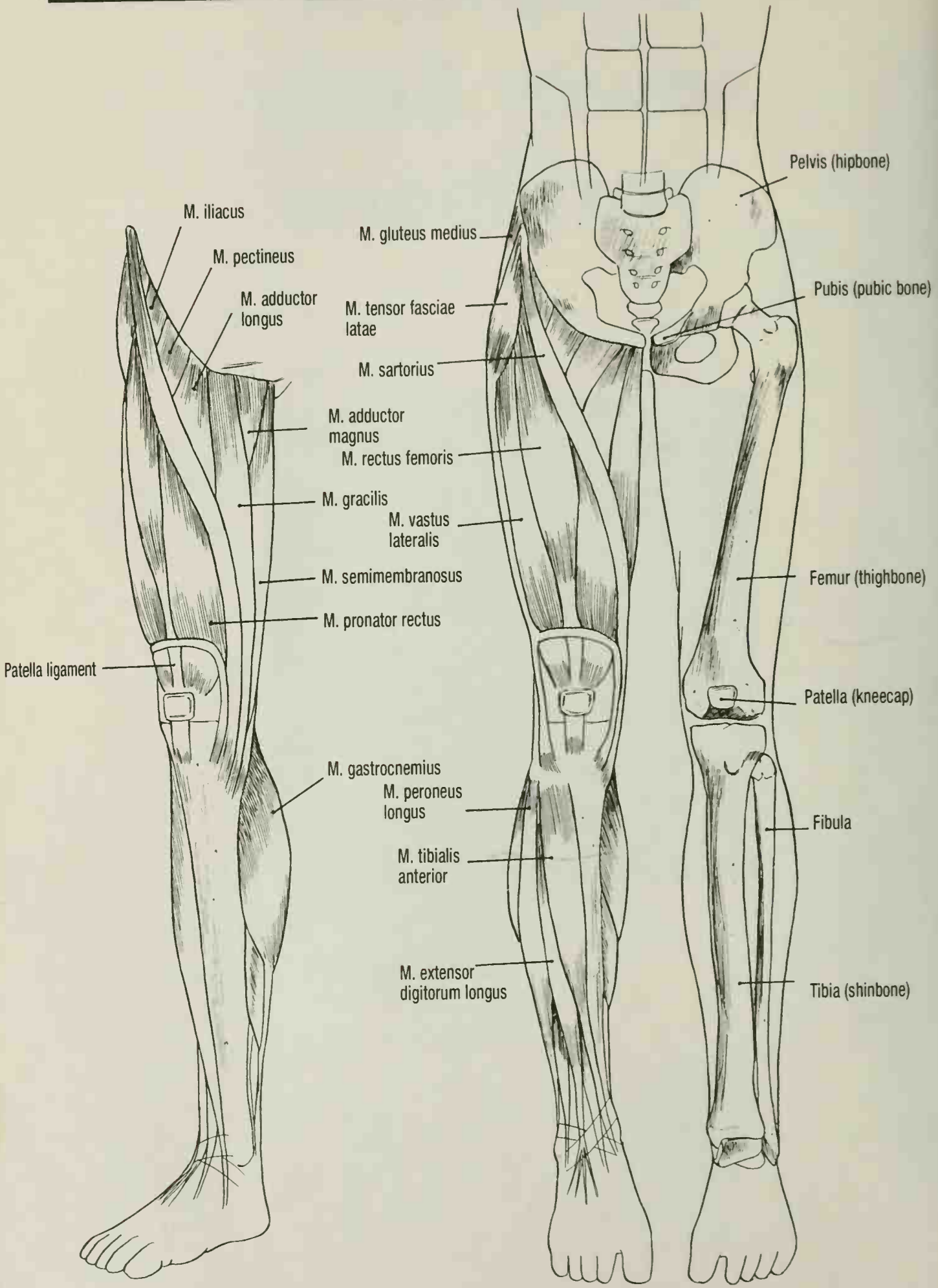
Throwing (Male) - Part 3

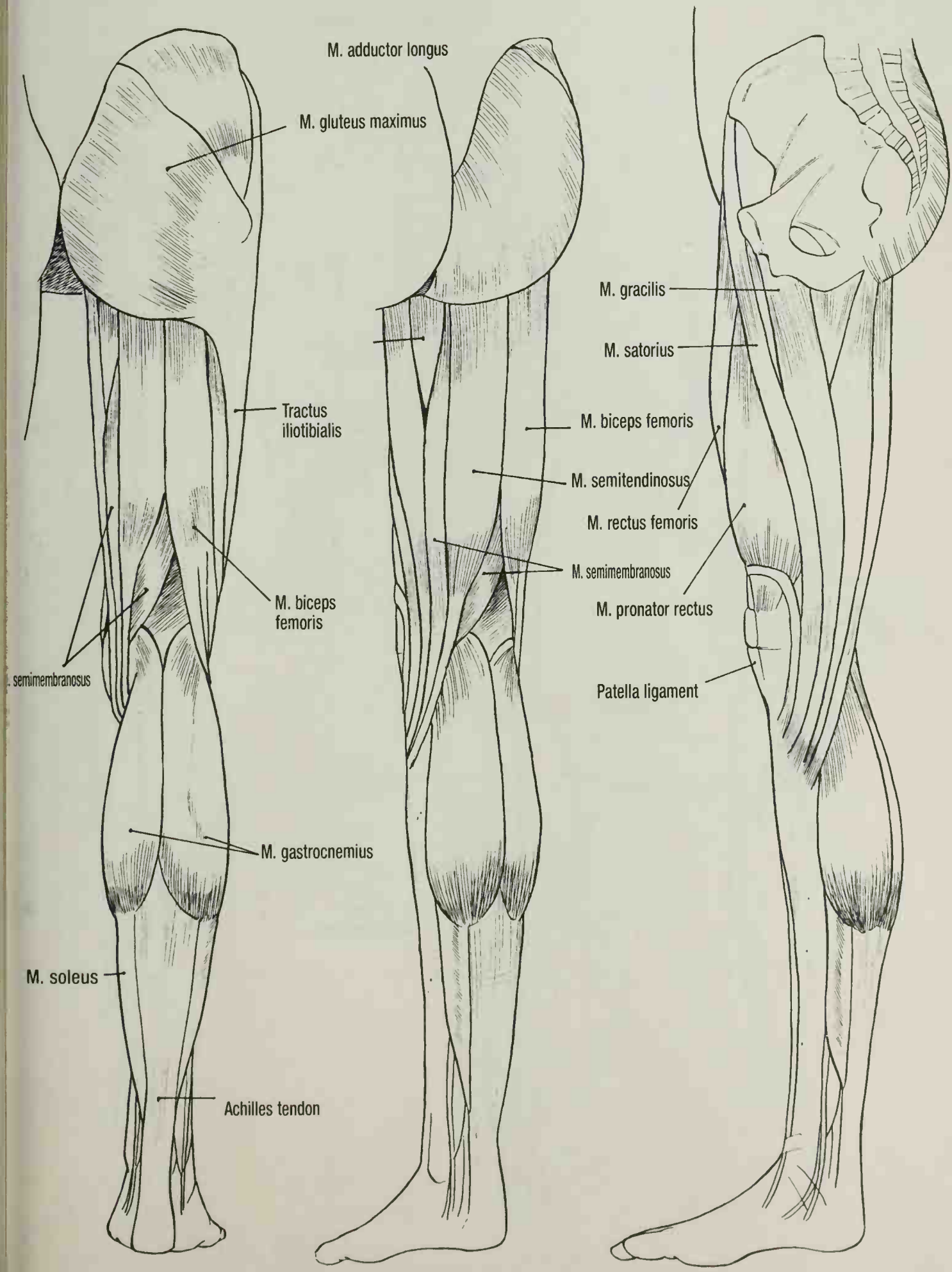


Chapter 4
Lower Body Variations

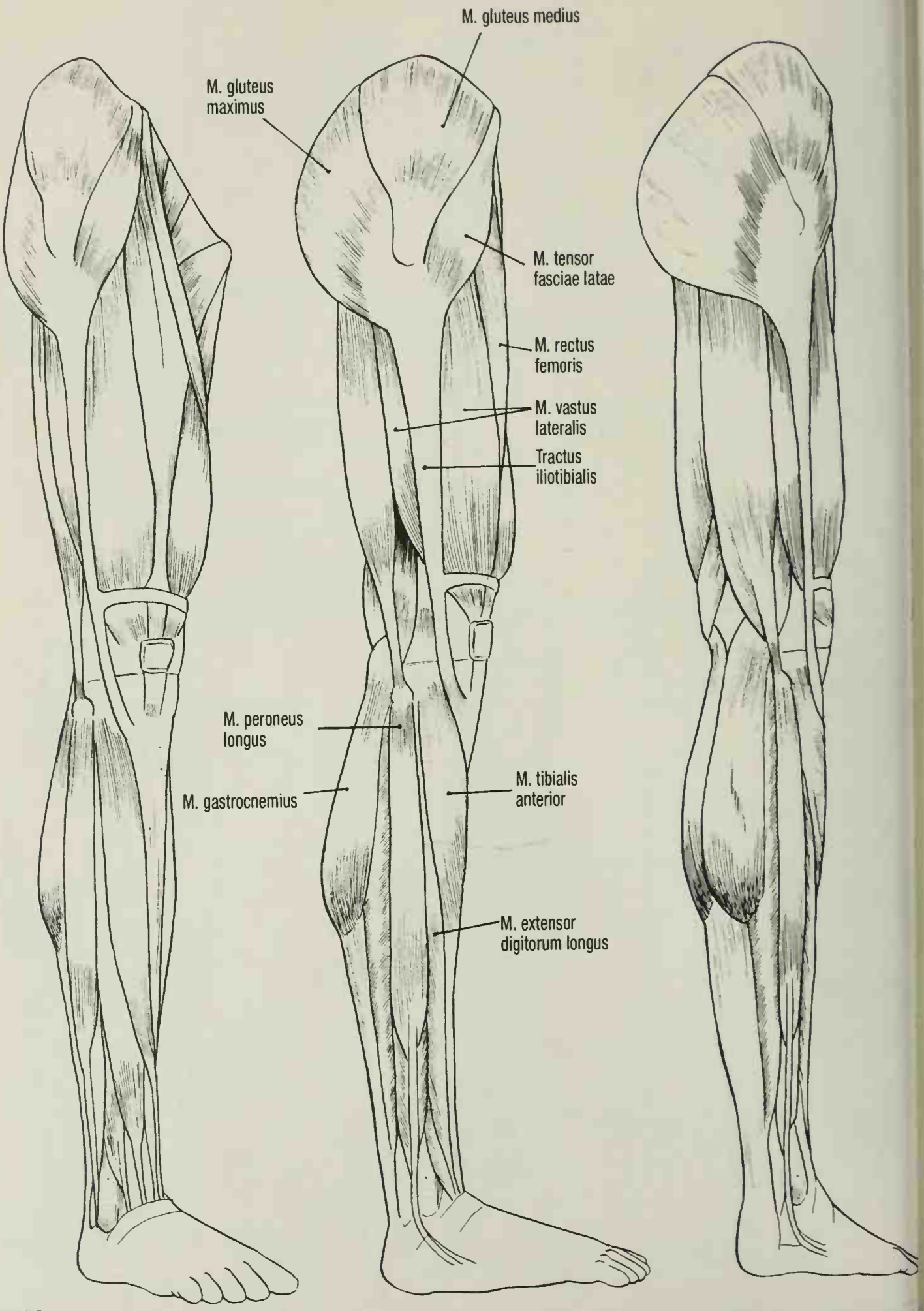


Construction of the Lower Body

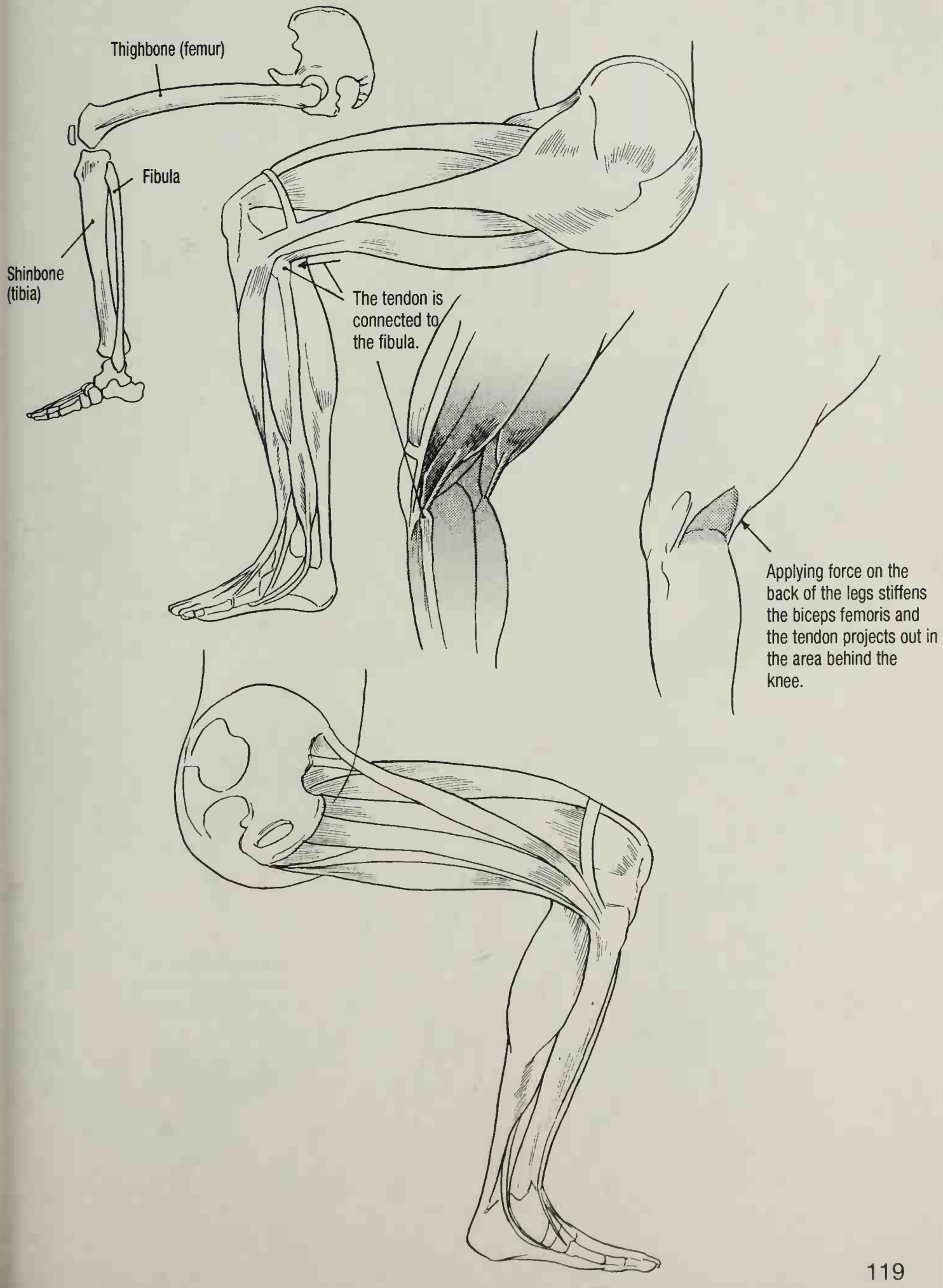



M. adductor longus
M. gluteus maximus
Tractus iliotibialis
M. biceps femoris
M. semimembranosus
M. gastrocnemius
M. soleus
Achilles tendon
M. gracilis
M. satorius
M. biceps femoris
M. semitendinosus
M. rectus femoris
M. semimembranosus
M. pronator rectus
Patella ligament

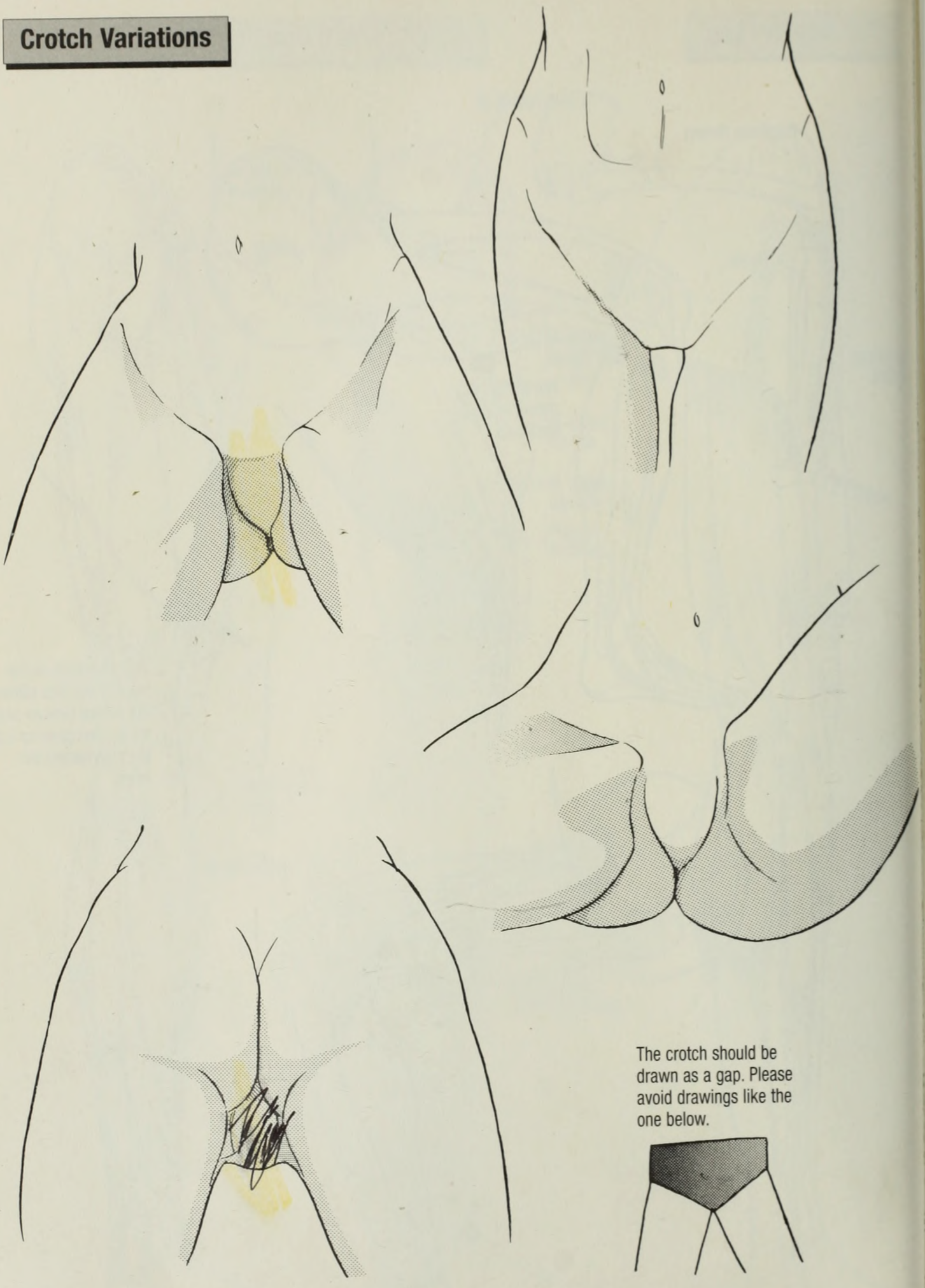
Construction of the Lower Body - Part 2



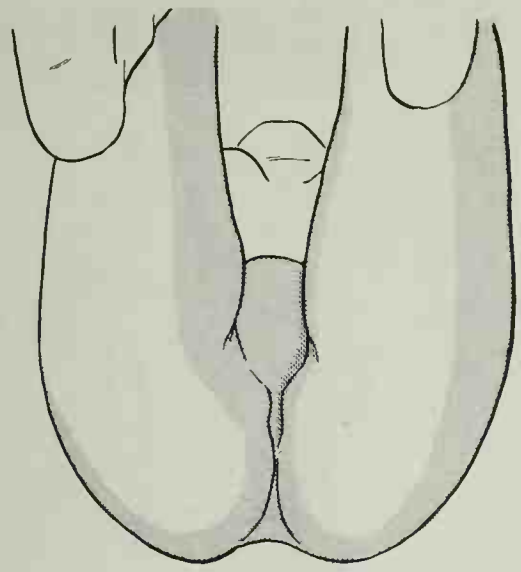
Bending the Leg

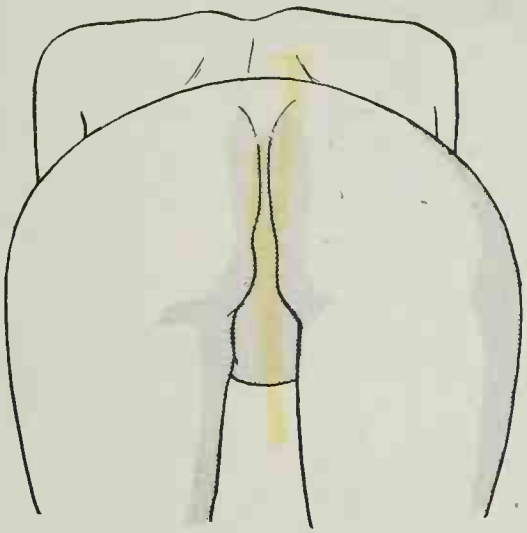


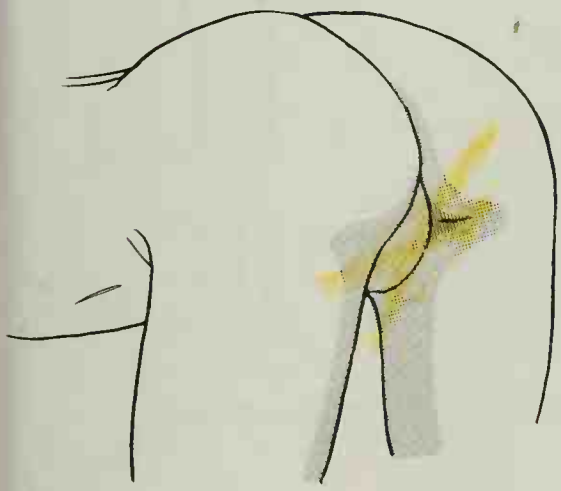
Crotch Variations



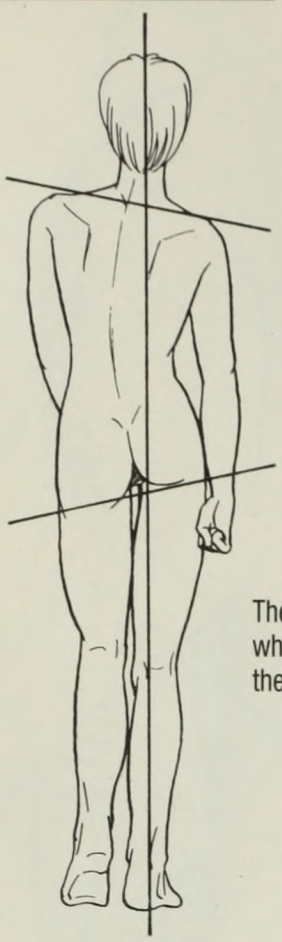
The crotch should be drawn as a gap. Please avoid drawings like the one below.





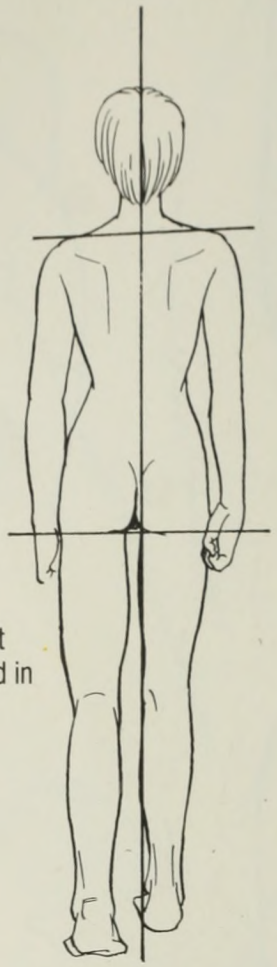


Buttocks Variations



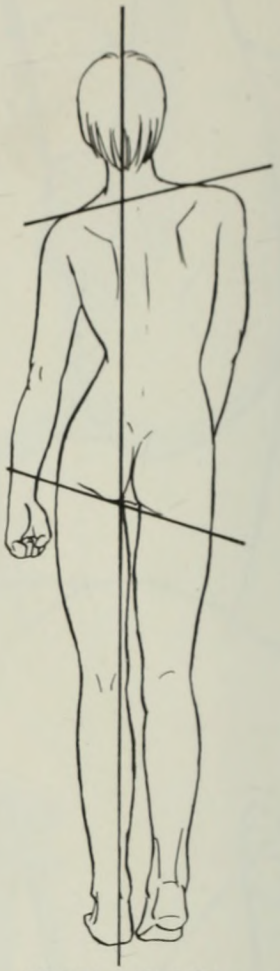
Weight on the right leg

Center of gravity

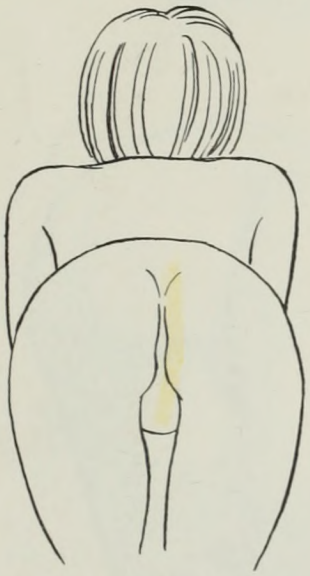


The muscles contract when force is exerted in the buttocks.

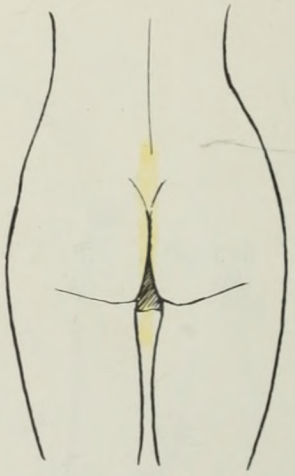
Weight practically on both legs



Weight on the left leg



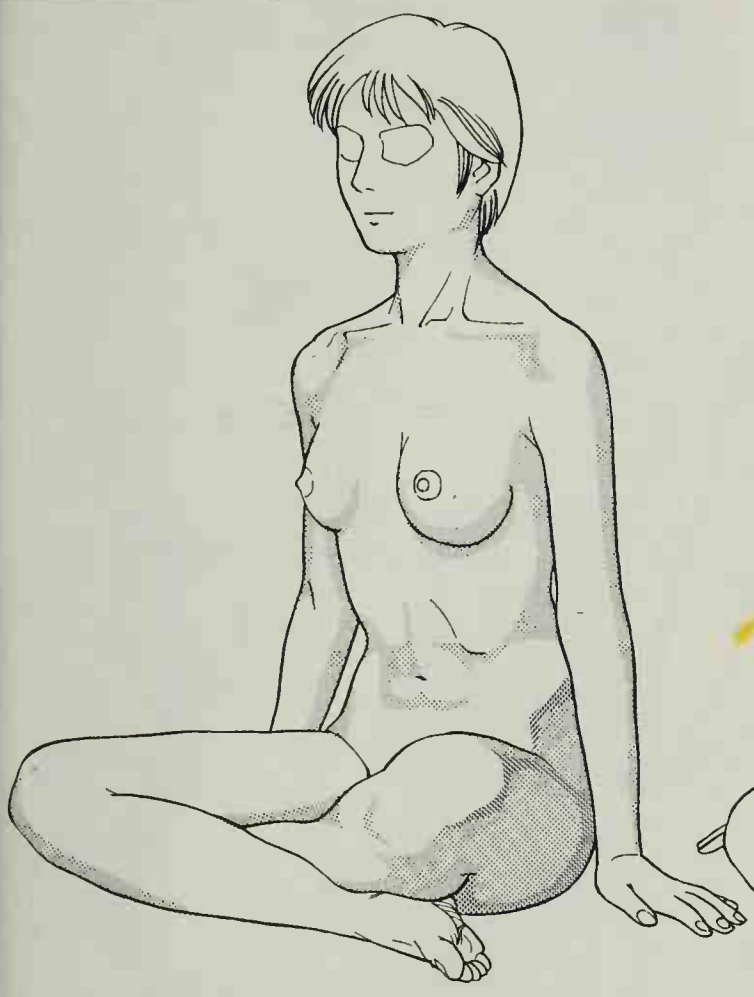
The wrinkles disappear when the buttocks are expanded.

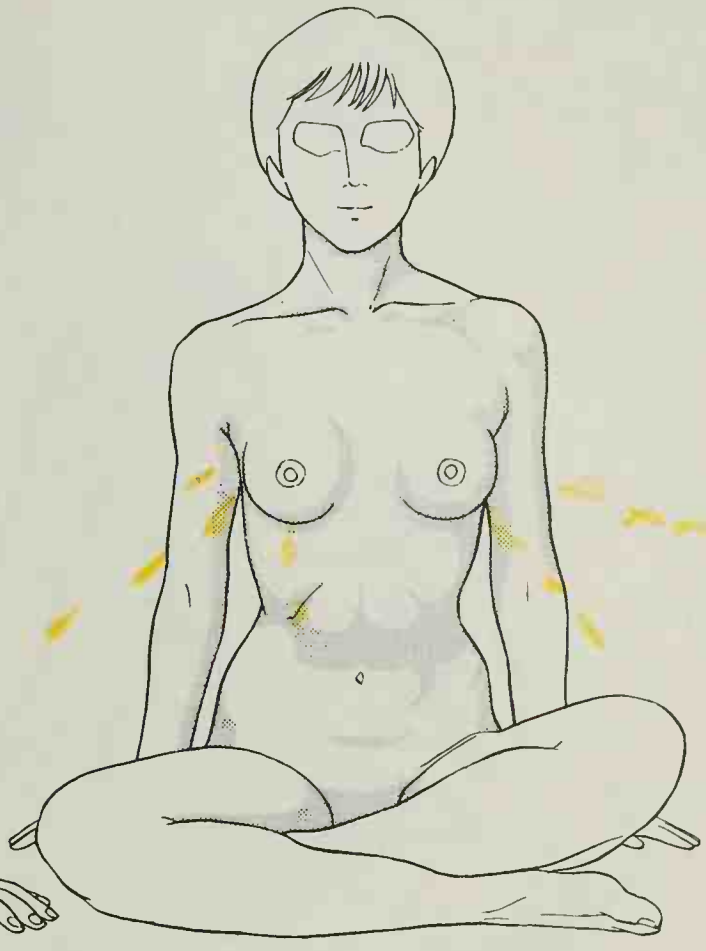


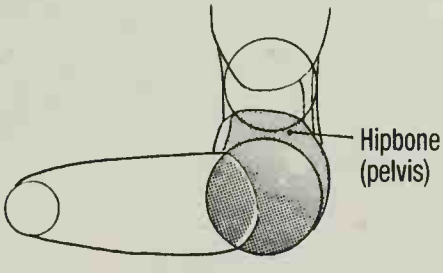
Wrinkles appear when the buttocks are contracted.

Wrinkles appear on the buttocks due to expansion and contraction of the muscles.

Sitting Cross-Legged

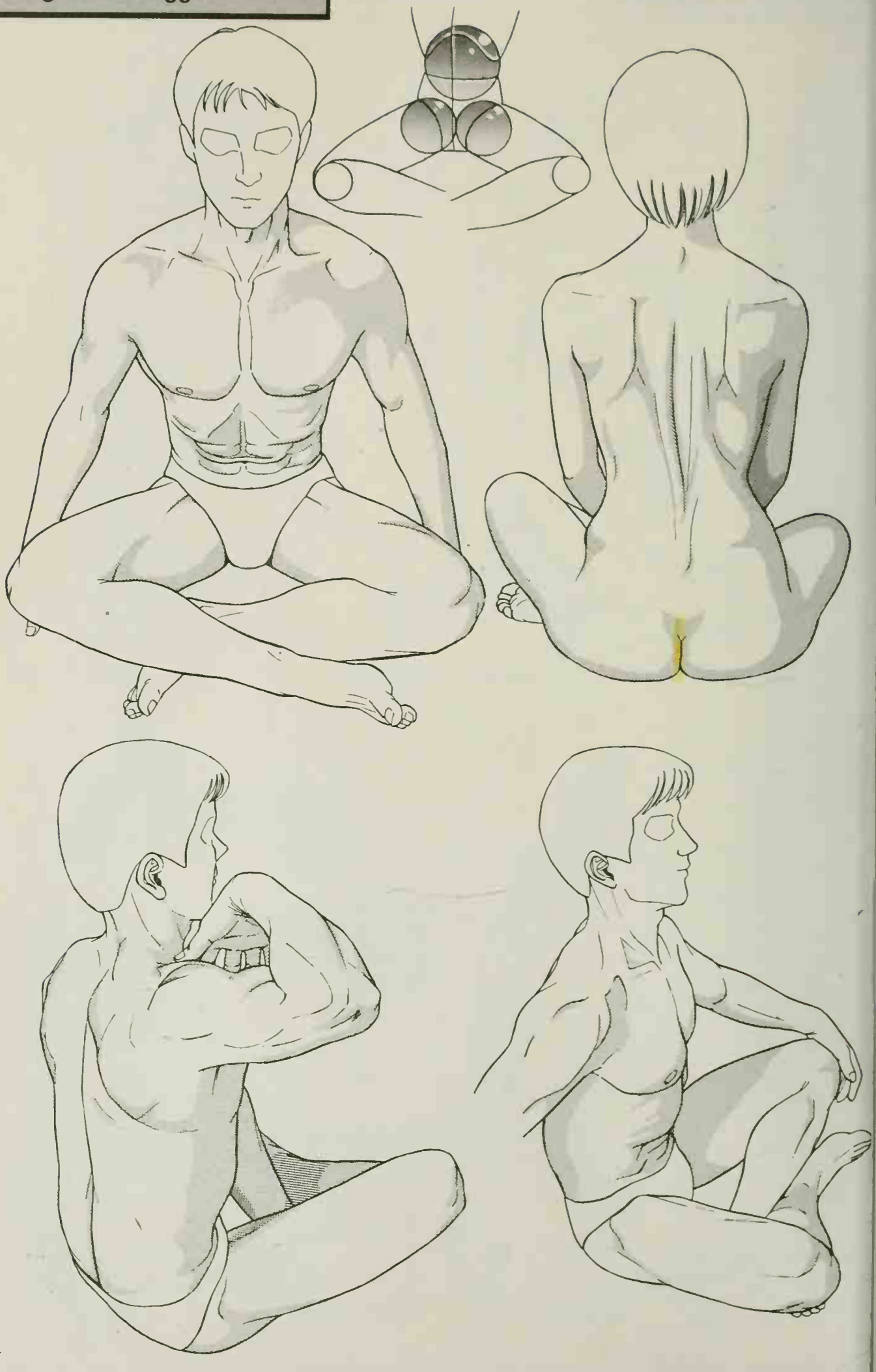




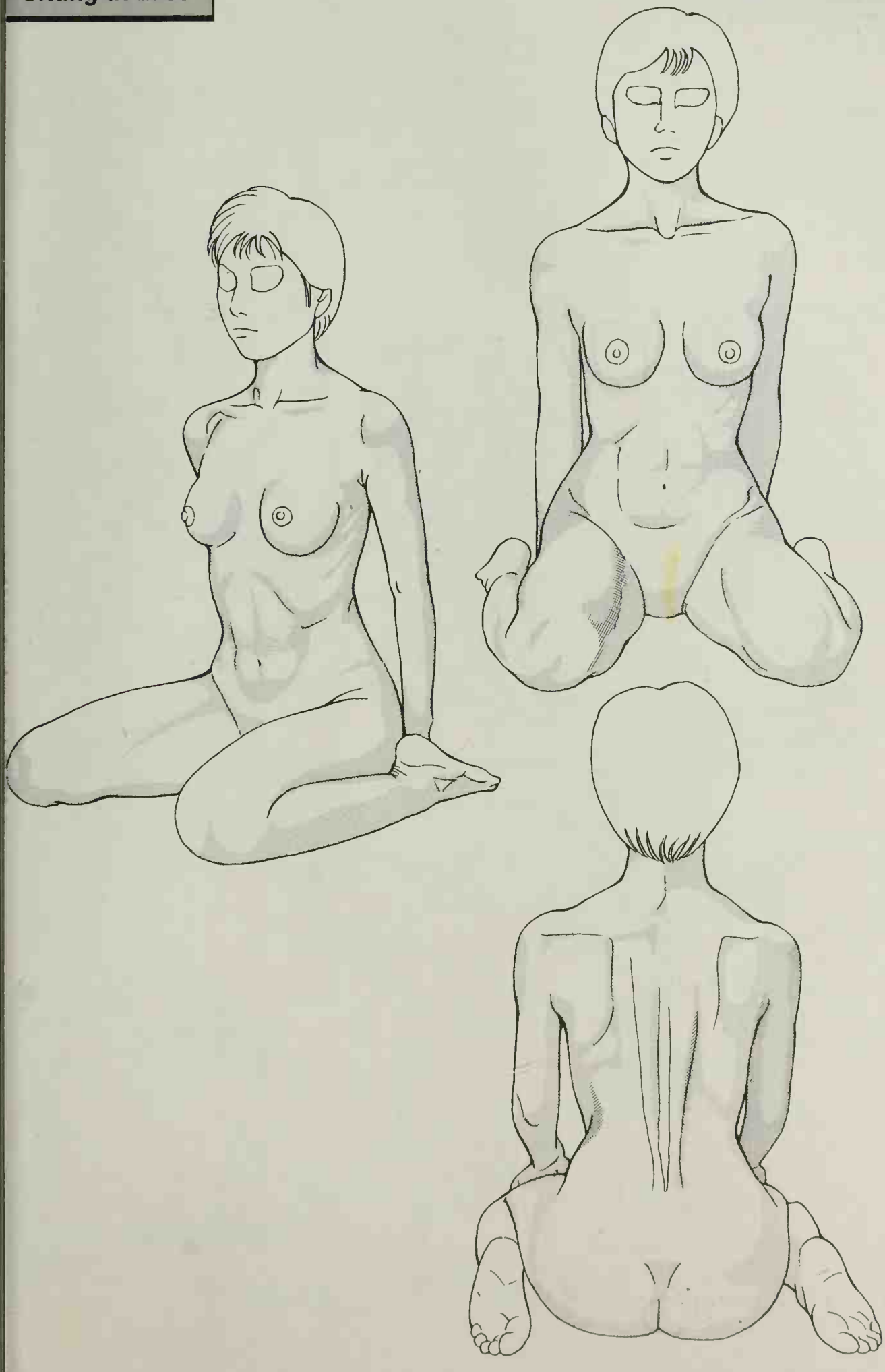


When the legs are bent, wrinkles appear in the fold between the legs and torso (upper pelvis area).

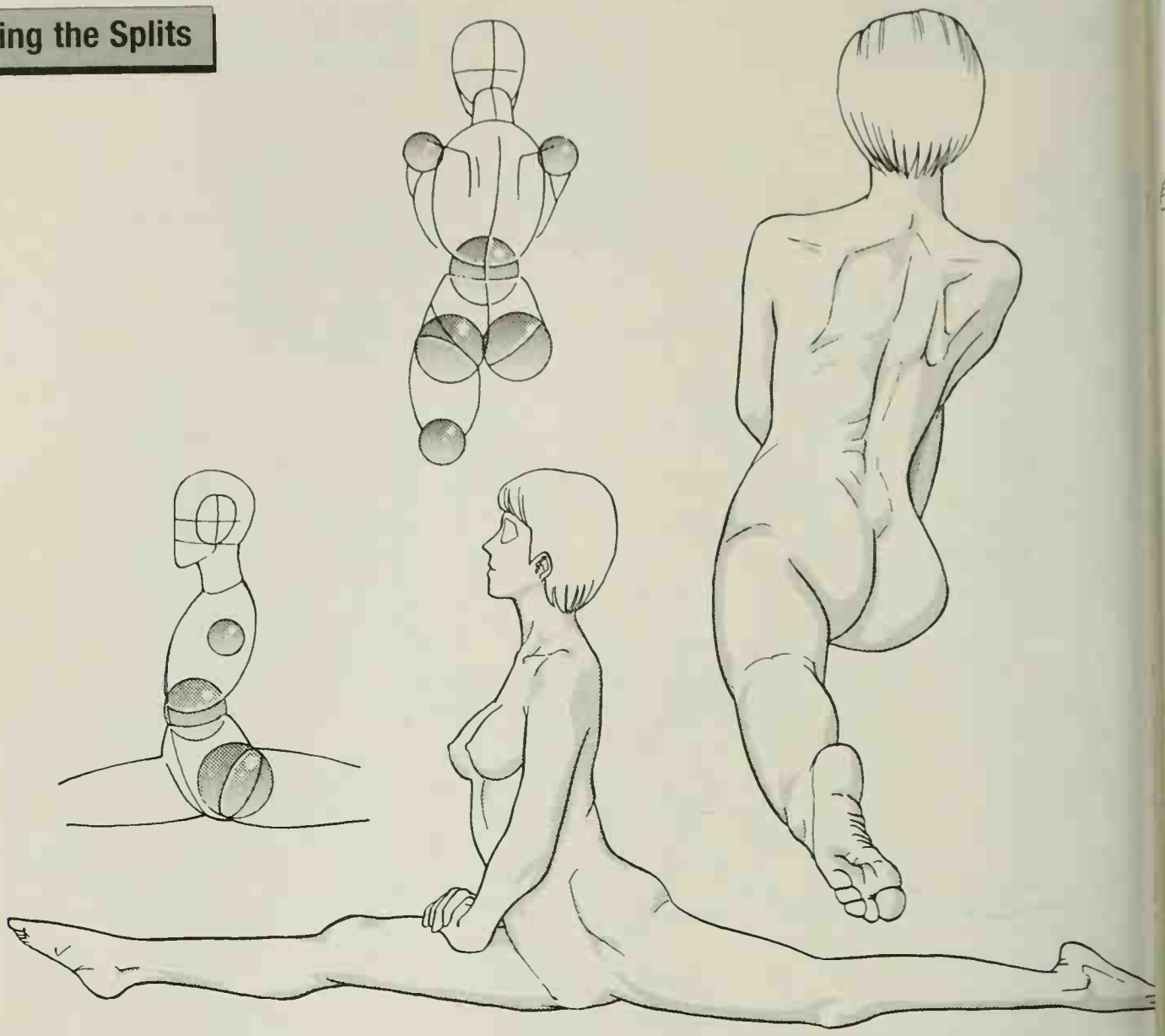
Sitting Cross-Legged - Part 2

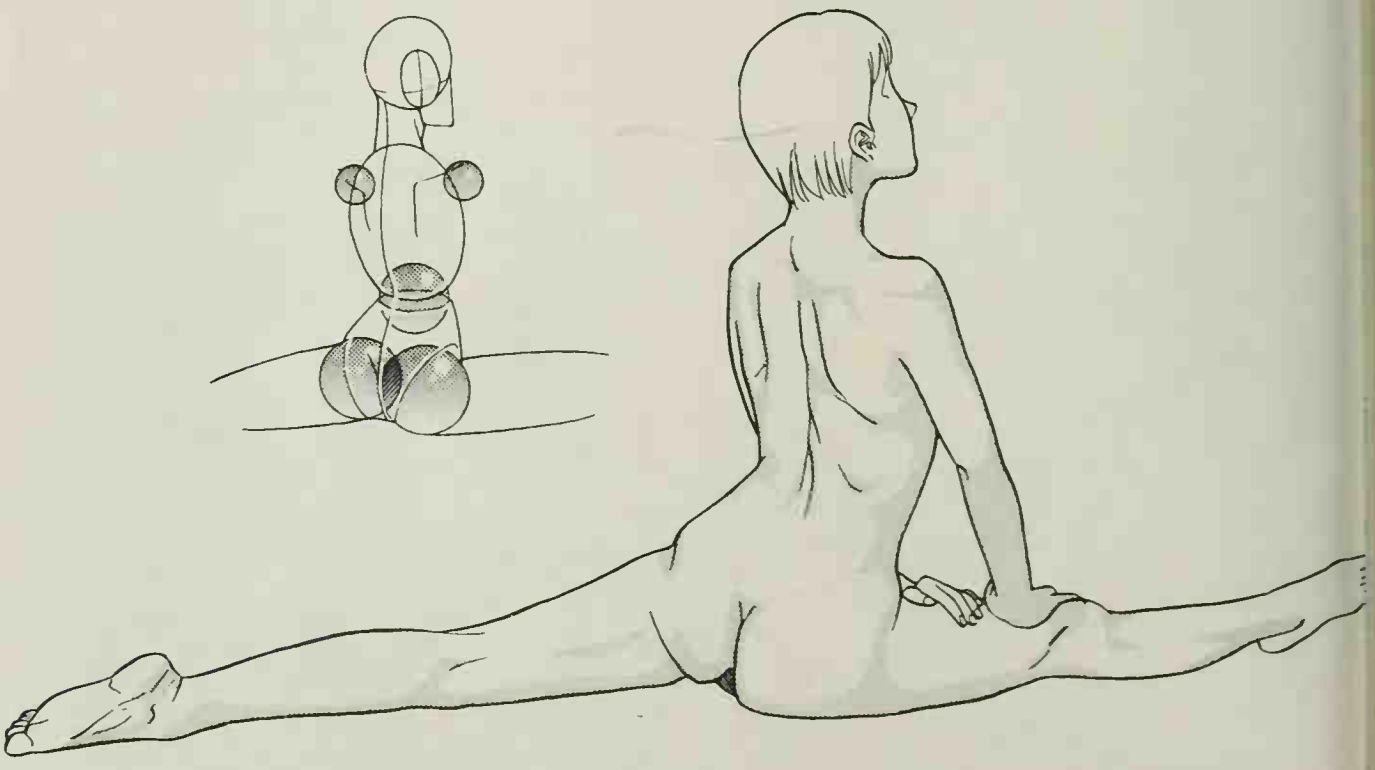


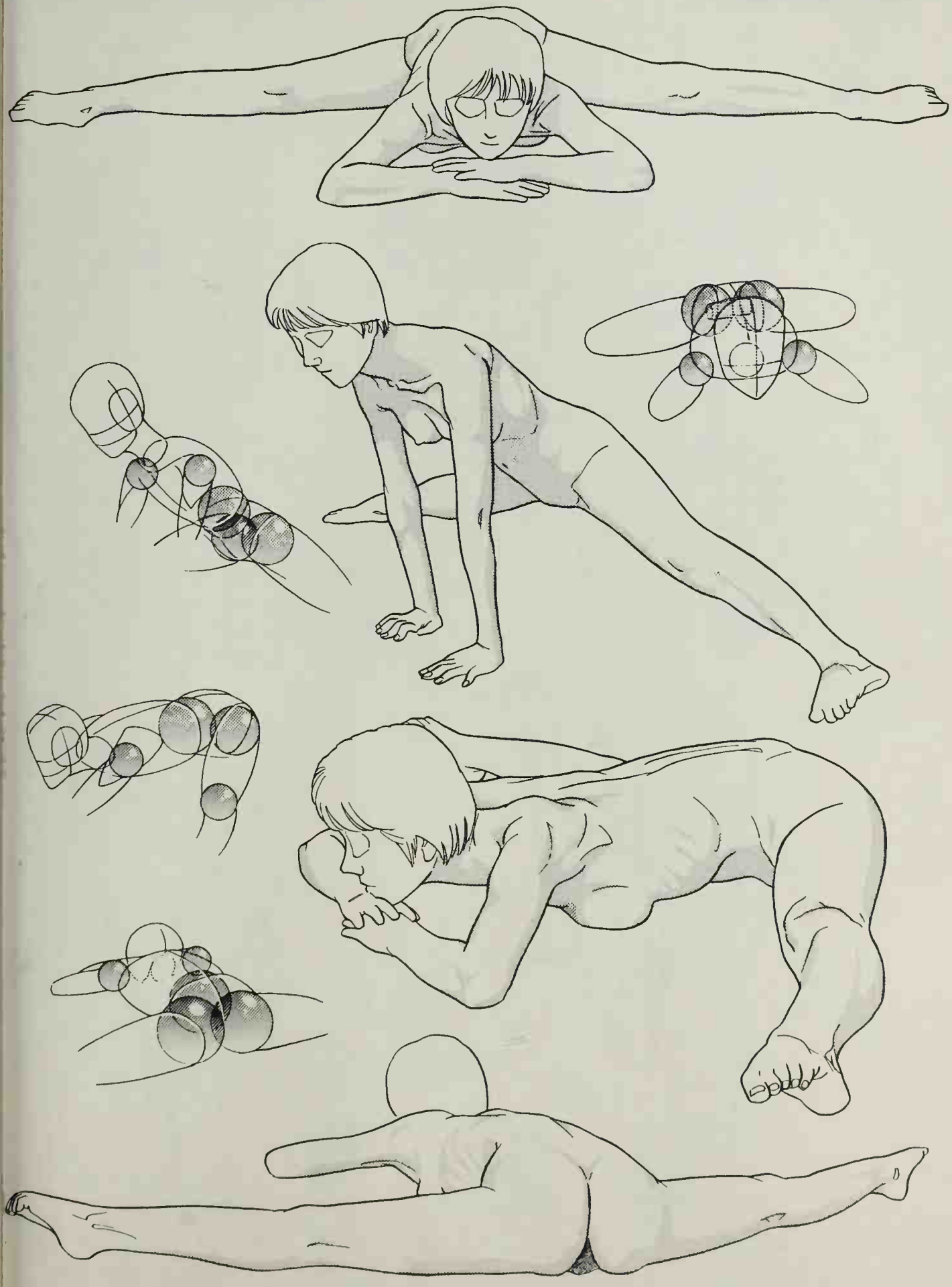
Sitting at Ease



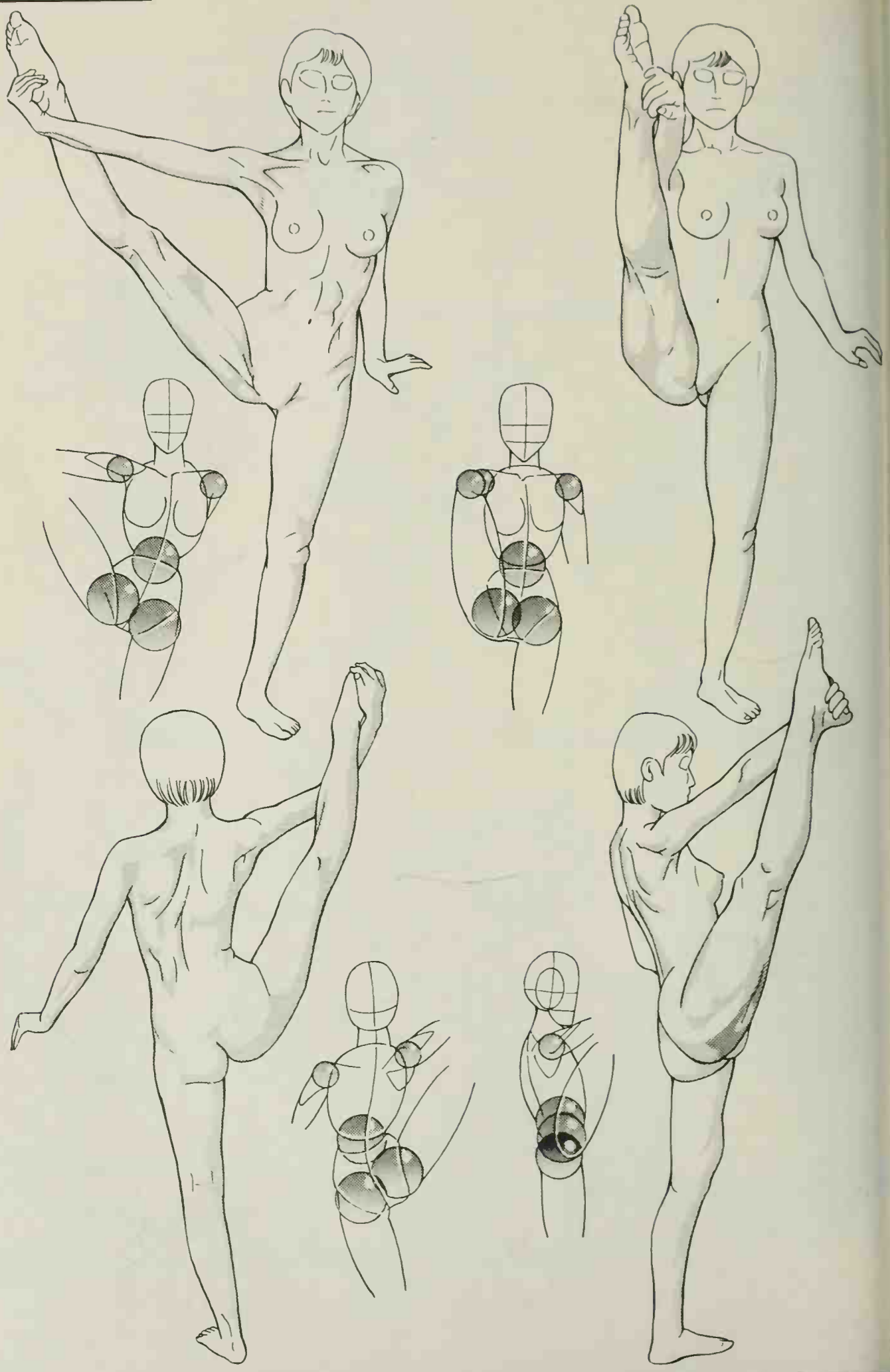
Doing the Splits



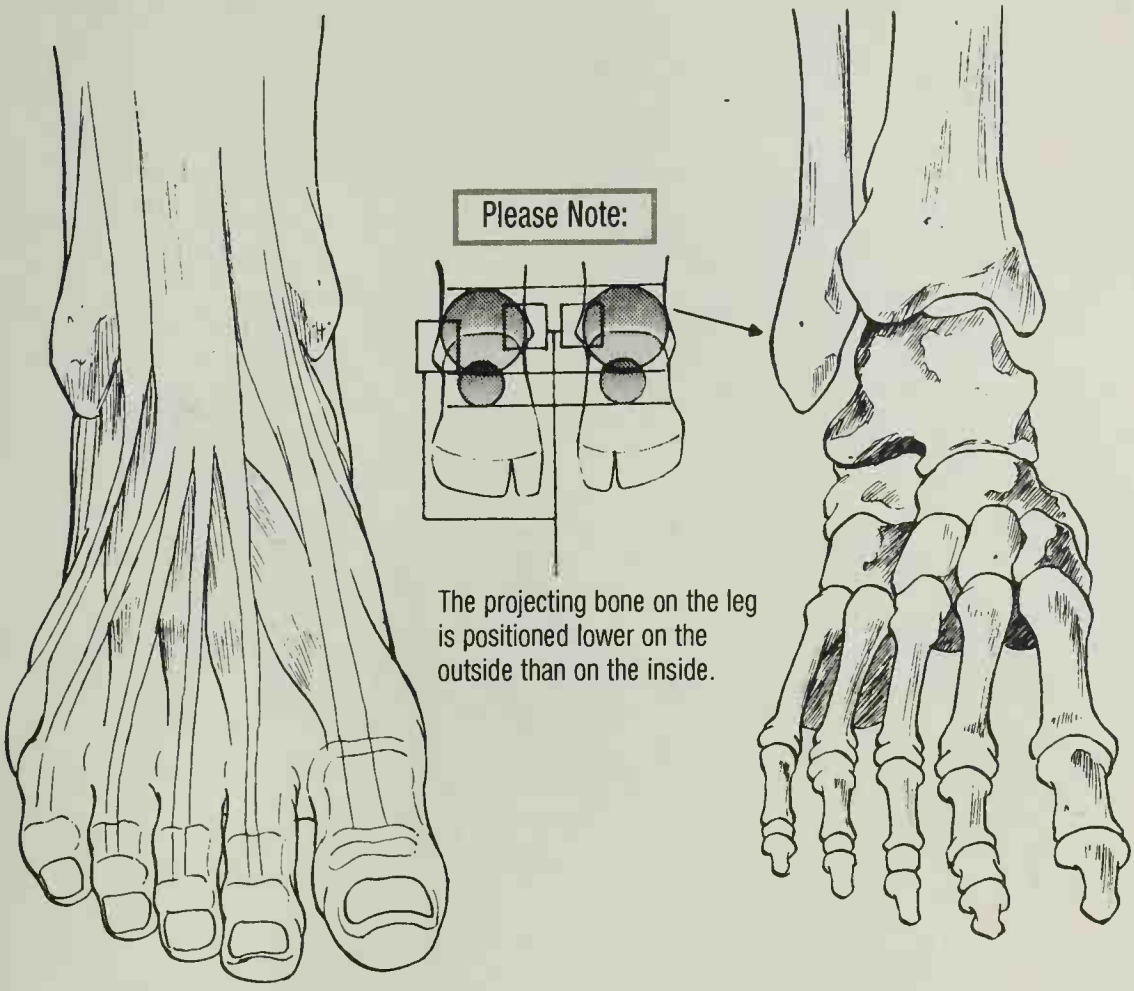


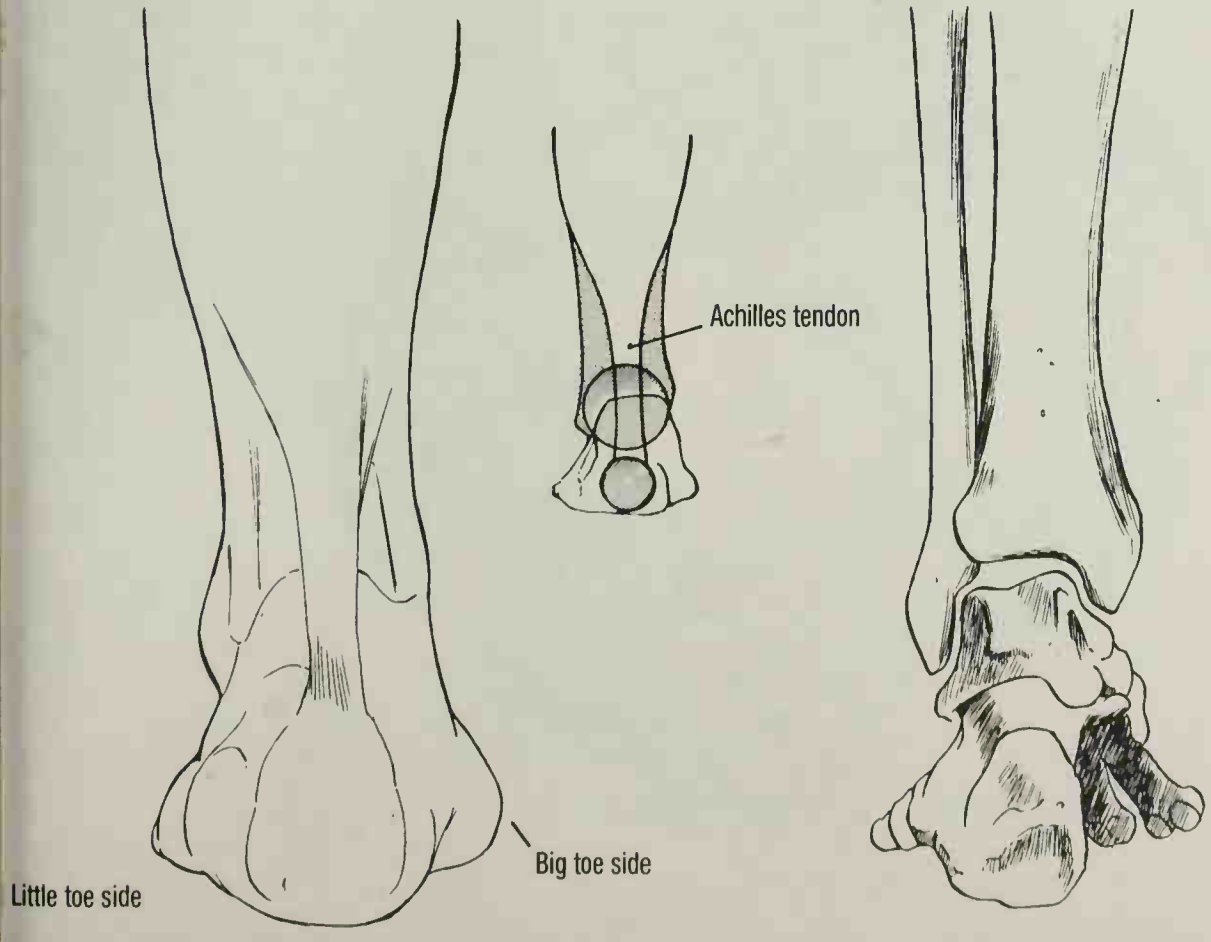


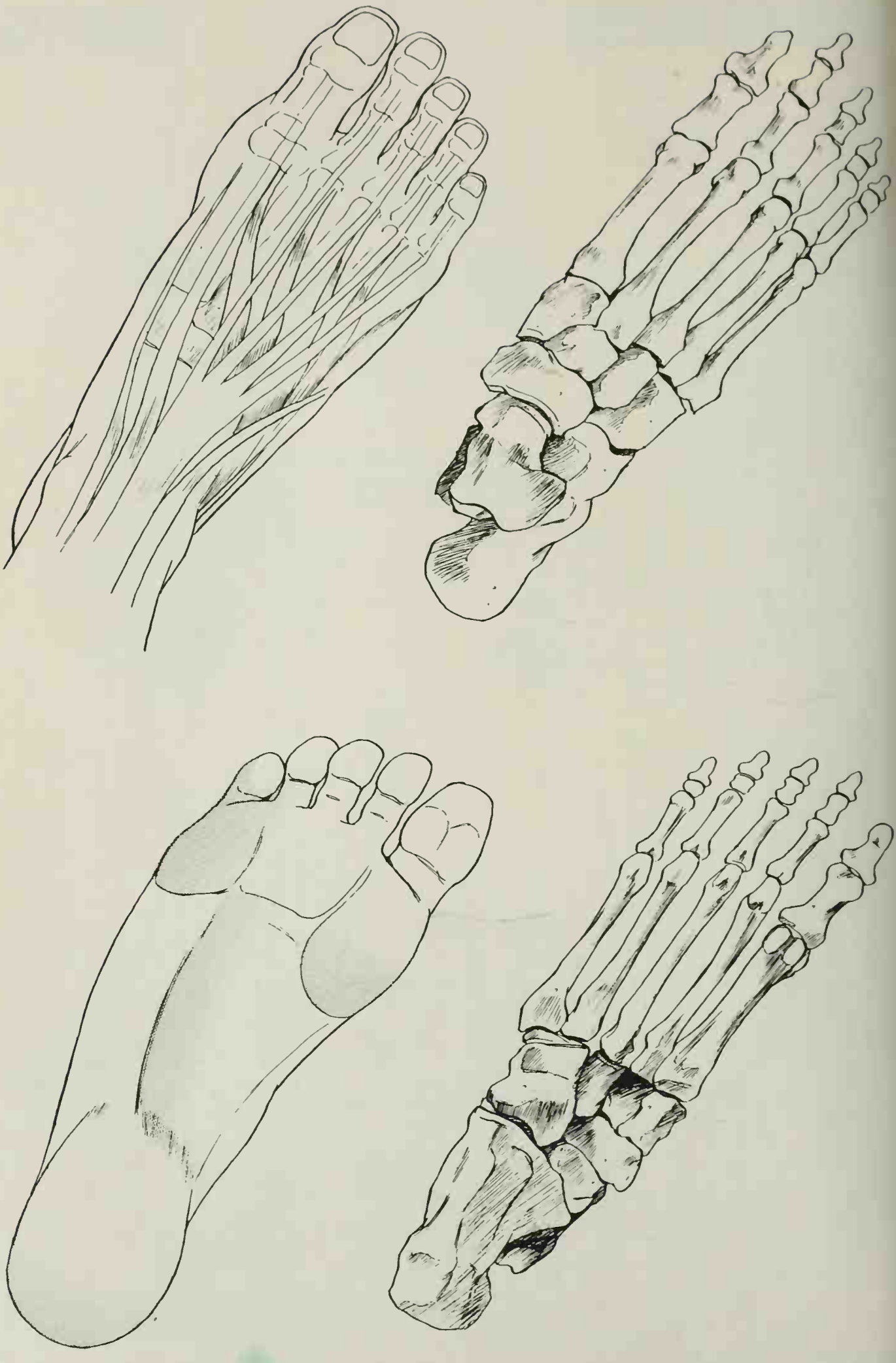
Standing Splits

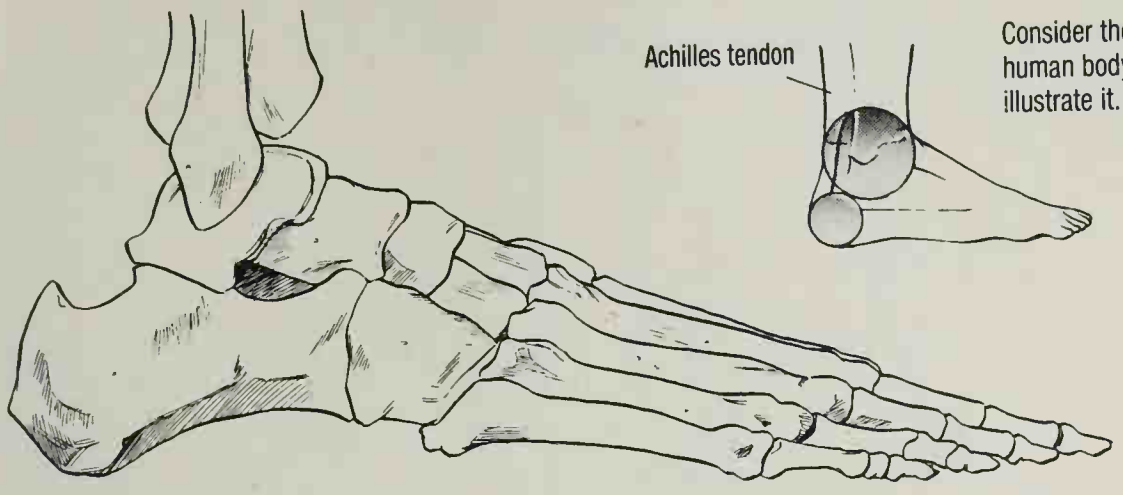


Construction of the Feet

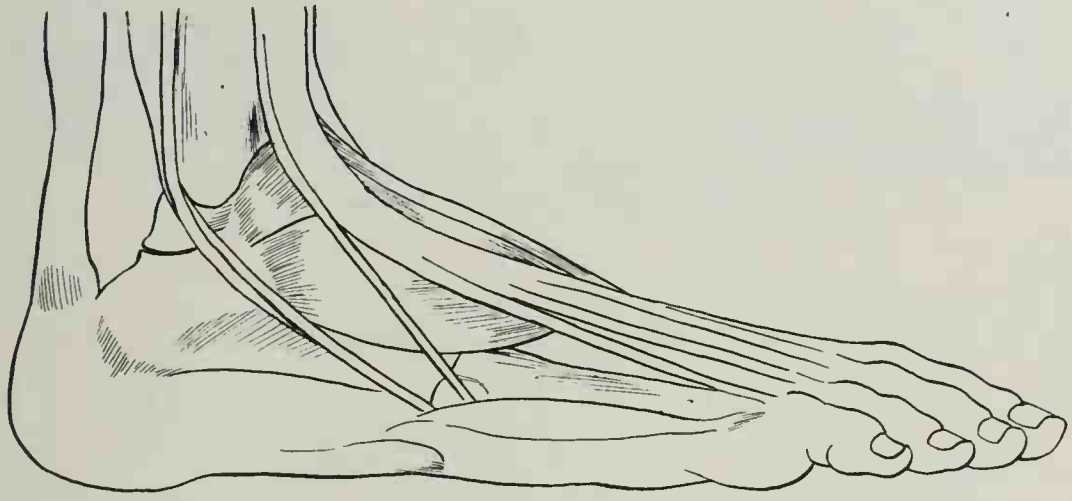


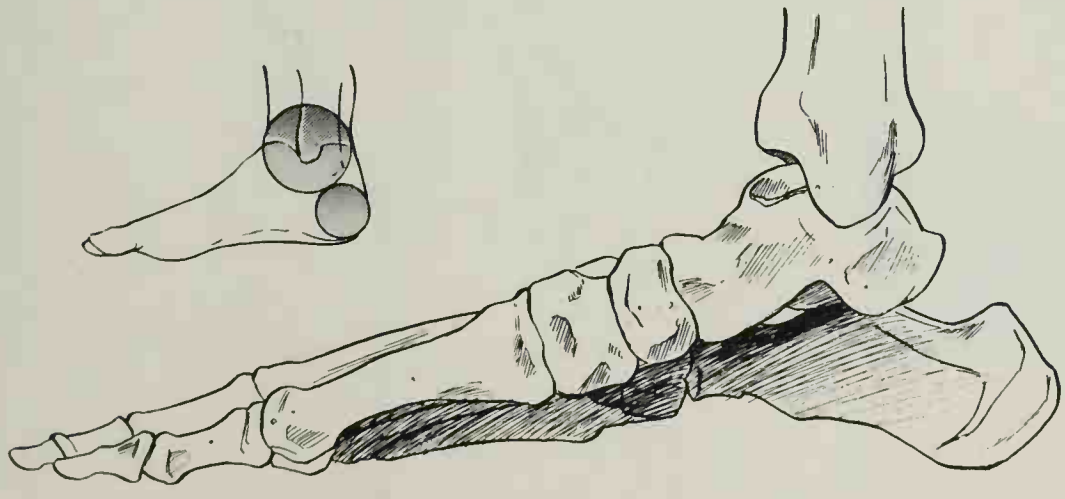


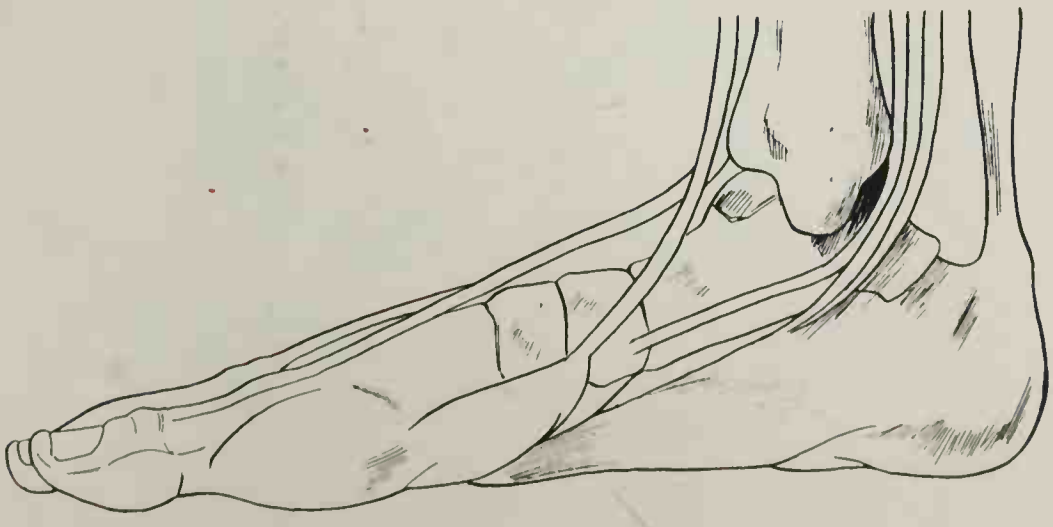




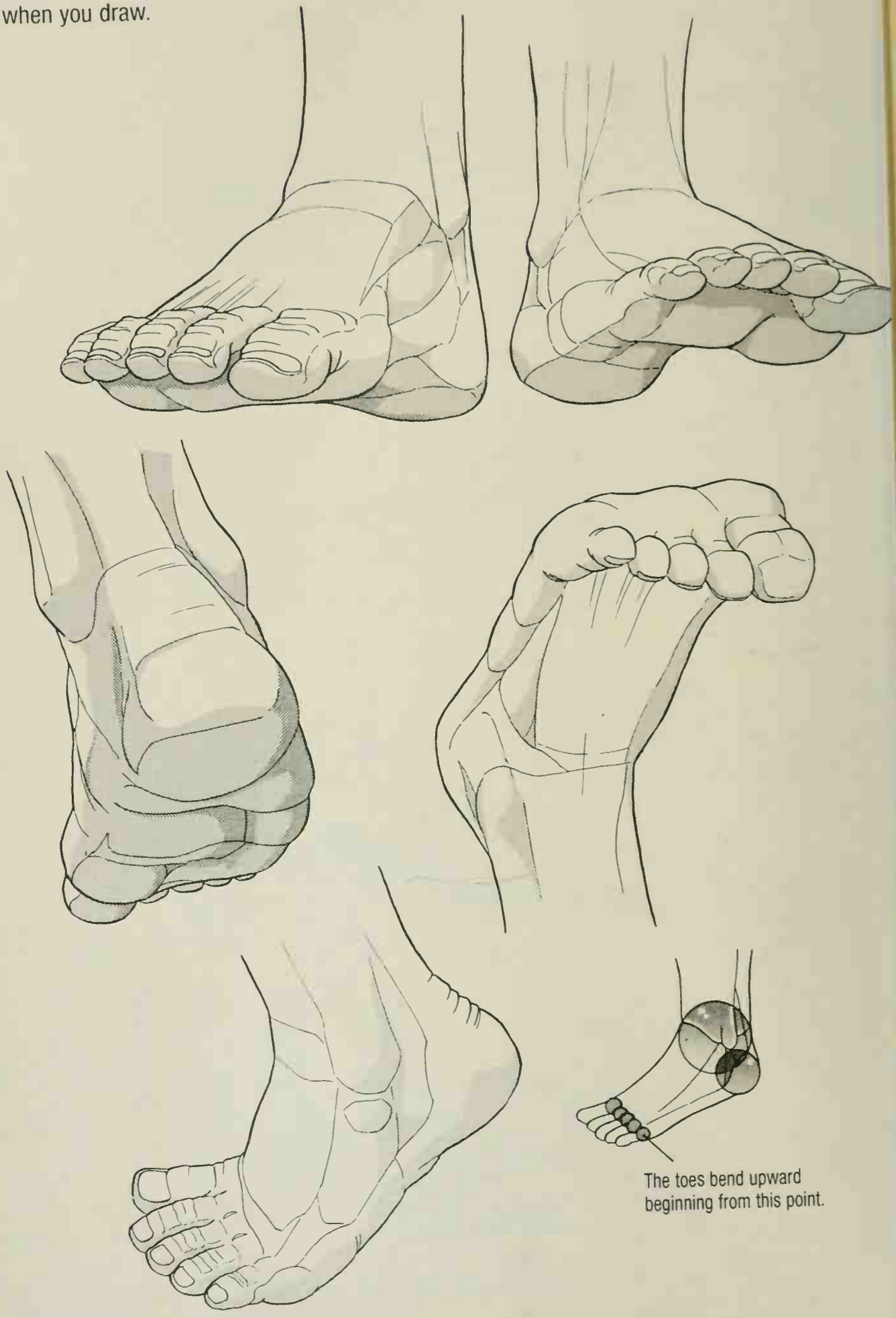
Consider the makeup of the human body, and then simply illustrate it.







Break all the parts into blocks and build from there when you draw.



The toes bend upward beginning from this point.

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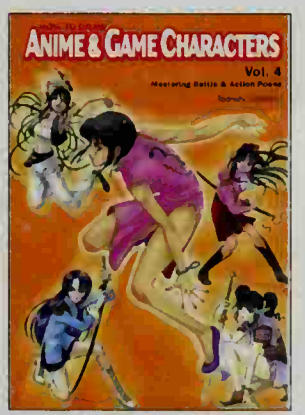

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