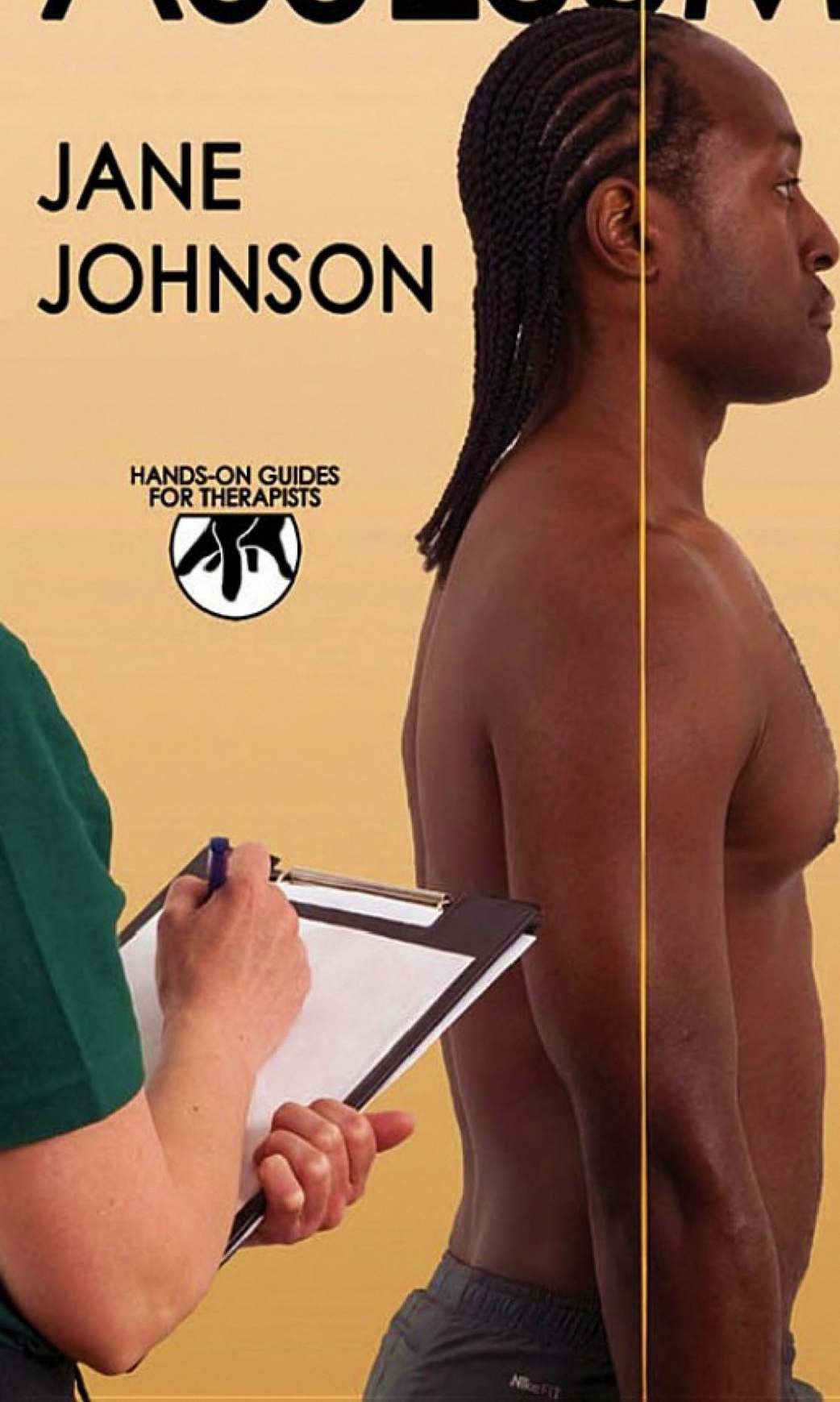


POSTURAL ASSESSMENT

JANE
JOHNSON

HANDS-ON GUIDES
FOR THERAPISTS



An illustrated
guide of 79
steps

Preface

Whether you are a student or practitioner of physical therapy, osteopathy, chiropractic, sports massage, sports therapy or almost any form of bodywork, including fitness instruction, yoga and Pilates, you will no doubt appreciate the value in carrying out postural assessments as part of your overall assessment procedure. The assessment of posture helps you to determine whether there is any muscular or fascial imbalance and whether this imbalance might be contributing to a client's pain or dysfunction.

Being able to assess posture for imbalance is a skill required by most therapists, yet until now, there have been few resources to support practitioners in this task. *Postural Assessment* is intended as a comprehensive, user-friendly guide to this topic, with tips that will enable you to perform your observations in a confident and competent manner. This book focuses on what posture reveals about the relationships among various body parts so that you may be better informed about whether such relationships are causing or contributing to pain or discomfort or whether these relationships might affect the stability of joints by increasing or decreasing joint range. The emphasis is on the assessment of static posture in standing and seated positions. Written for complete beginners in the use of postural assessment as an examination tool, this book will generate ideas about what to look for, how to identify common postural forms and how to make sense of your observations.

Postural Assessment is organised into two parts. Part I explains how to get started and answers questions such as these: Why perform postural assessment? Who should have postural assessment? Where and when should postural assessment take place? What are the benefits of doing postural assessment? In this introduction you will learn about factors affecting posture and the ideal posture as well as how to provide the correct environment for postural assessment, what equipment you will need, how long it should take and how and why to document your findings. Line drawings illustrate the bony landmarks you will be using as you work through later chapters.

Part II contains the nuts and bolts of postural assessment—where you start and what you look for. Arranged according to whether you are observing your client from the back, side, front or in a seated position, each of the chapters in this part of the book follows the same format: A part of the body is presented with a line drawing and a short description of how to assess that body part, followed by a paragraph explaining what your findings mean. For example, what does it mean that your client has inwardly rotated shoulders—which muscles are short and tight, and which are long and weak? The What Your Findings Mean sections explain what various postures suggest about underlying musculature; they will help you relate your observations to real-life clients.

Notice that throughout chapters 3, 4, 5 and 6 (the chapters that make up part II), I refer to what each posture suggests, might mean, indicates, may mean or could mean. This is because I have chosen to analyze posture based on traditional assumptions regarding how muscles work. As a practitioner myself, I have inevitably weighted some suggestions more than others, based on my own experiences. It seemed helpful to include these sections to provide a starting point from which to develop your own ideas. In my experience, bodyworkers are markedly varied in their approaches to both the assessment and treatment of clients, and so you may not agree with my comments in these sections. Many steps offer quick tests you can do to justify these statements. I openly encourage you to question what your findings mean and ask how you could confirm for yourself, for example, that a person standing with protracted scapulae may have lengthened and weakened rhomboids and shorter anterior chest muscles. Perhaps more important, nowhere do I state what you should or could do to correct posture. This book is about what you observe, not what you do with your findings.

Putting together this text on postural assessment has been an interesting process. I was trained by educators who upheld a traditional view of musculoskeletal anatomy and physiology, and I have therefore held that knowledge at the core of my practice. However, it pays to keep an open mind and to be alert to progress in the fields of anatomy and physiology, perhaps even to question traditional assumptions about the way individual muscles work. I encourage you to seek out information to support your own conclusions regarding postural assessment. For example, in their article 'Anatomy and Actions of the Trapezius Muscle', Johnson, Bogduk, Nowitzke, and House (1994) carried out a study that 'refutes misconceptions about the actions of trapezius and how they are conventionally depicted' (p. 44). In another more recent article in a series on the psoas muscle, Thomas Myers (2001) questions whether the psoas is a hip flexor and whether this muscle contributes to thoracolumbar rotation.

The appendix contains a full set of charts for documenting your findings. These charts provide space for you to write your observations as you work through each step of postural assessment, whether you are observing your client from the front, side, back or in a standing or seated position.

As with other titles in the Hands-On Guides for Therapists series, the step-by-step format is supported throughout with tips to get you up to speed with the assessment technique. There are also Quick Questions at the end of each chapter so you can test yourself as you proceed. Unlike other titles in the series, *Postural Assessment* uses predominantly simple line drawings rather than photographs to facilitate identifying anatomical relationships.

As therapists, we are encouraged to work holistically with our clients, linking one body part with another and appreciating how body systems interrelate. Yet when attempting to process a new skill, we can sometimes feel overwhelmed trying to assimilate all the information. I am therefore hoping you will forgive me for compartmentalising the body and its assessment in the presentation of this book. Here, assessment procedures are presented in bite-sized chunks to give you time to process the information. Whatever your profession, if you are involved with helping people to look after and feel better in their bodies, I hope you will find this book of value.



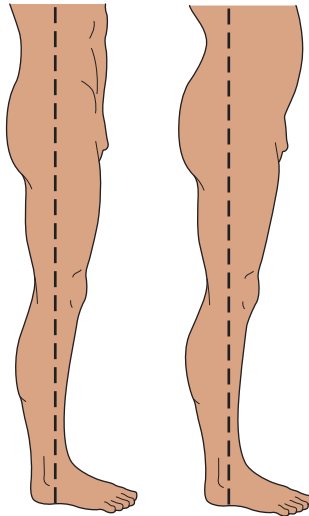
Welcome to *Postural Assessment*. Let's start by addressing some common questions concerning this fascinating subject. For example, what do we mean by the term *posture*, and why should you do a postural assessment? For which clients might postural assessment be helpful? When and where should the assessment be done? Do you need any equipment? This chapter answers these questions and examines factors affecting posture. You might wish to glance at the five Quick Questions at the end of this chapter before you begin, because doing so may help you retain some of the information if you are new to this subject.

What Is Posture?

Ask anyone to demonstrate poor posture, and it's a fair bet that most will adopt a slouched or hunched position, protracting their shoulders and rounding their backs to exaggerate the kyphotic curve in the thoracic spine. Ask for a demonstration of good

STEP 6 Abdomen

An area that sometimes gets overlooked in postural assessment is the abdomen. How does the abdomen of your client appear? Is it flat or protruding? In a normal, healthy person, the abdomen should be flat.



Take six abdomens! The photographs on the opposite page demonstrate the variety in the shape and position of the abdomen when a person is viewed laterally. Does an abdomen protrude because the person is overweight or pregnant, or it is the result of the person's overall standing posture and an anteriorly tilted pelvis? Is there increased tension in the abdomen perhaps corresponding to a posteriorly tilted pelvis and a decreased curve in the lumbar spine?

What Your Findings Mean Protrusion of the abdomen could be a natural consequence of pregnancy or the result of increased lumbar lordosis, or it could simply be excess adipose tissue because the client is overweight. Clients with restrictions in the musur

UPPER BODY



STEP 7 Lumbar Spine

This is a good point at which to take stock of your findings. You may have noticed that nowhere in the text has it been suggested that you *should* treat a client based on a particular observation of posture. Looking at the lumbar spine, it is useful to remember that some people have naturally increased lumbar curves and are asymptomatic; others may have mildly increased lumbar and thoracic curves and require no treatment at all.

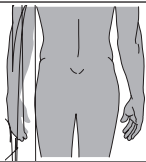
The lumbar spine and pelvis are inherently linked. Increases or decreases in the lumbar curve correspond with altered positions of the pelvis. However, it can be difficult to identify pelvic position when you are first learning postural assessment, so observing the lumbar region first is a good place to start. Does the curve of your client's lumbar region look normal, or is there evidence of increased or decreased lordosis? The figures on page 79 might help you understand where the lumbar vertebrae lie with relation to a plumb line when a client has a normal (a), increased (b) or decreased (c) lumbar lordosis.

What Your Findings Mean An increased lordotic curve indicates an anteriorly tilted pelvis. For a full explanation of pelvic positions, please see page 76. Increased lordosis in this region could explain pain resulting from compression of soft tissues in this region—for example, if there were increased compression on the posterior part of the lumbar intervertebral discs and shortening of the lumbar erector spinae. The correct functioning of the zygapophyseal joints in the lumbar spine may also be compromised if these too are compressed. The rectus abdominis may be longer and therefore weaker than usual, as may the hip extensors, whereas the muscles responsible for lumbar extension may be shortened.

The next time you are treating a client with an increased lordotic curve, you might find it helpful to assess the length of the hamstrings. Anatomically, a lordotic curve accom-

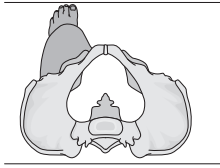


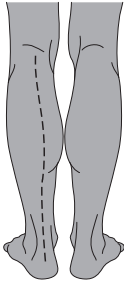
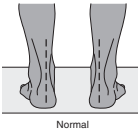
Anatomically, an obvious decrease in the normal curve of the lumbar spine may be associated with tightness in the hip extensors and longer, and perhaps weakened, hip flexor muscles. Table 4.1 summarises this information.

Left side		Right side
	Step 11 Thoracic Spine	
	Step 12 Thoracic Cage	
	Step 13 Skin Creases	
	Step 14 Upper Limb Position	
	Step 15 Elbow Position	
	Step 16 Hand Position	
	Step 17 Other Observations	
LOWER BODY		
	Step 1 Lumbar Spine	
	Step 2 Pelvic Rim	
	Step 3 PSIS	

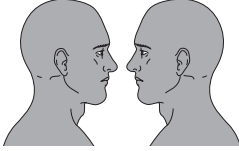
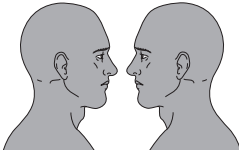
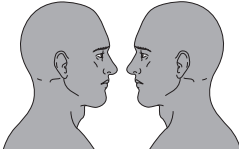
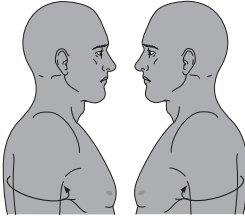
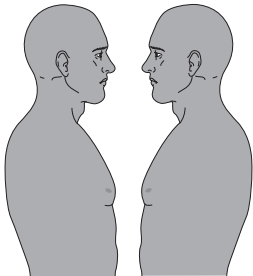
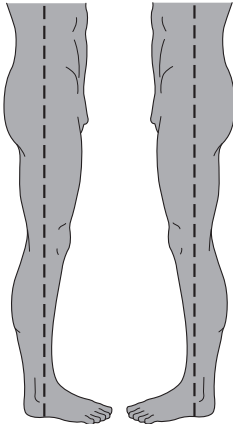
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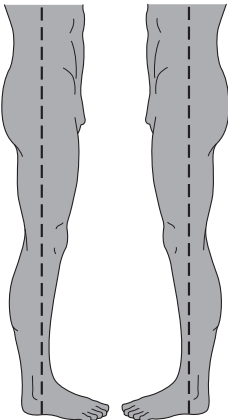
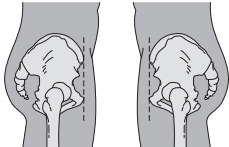
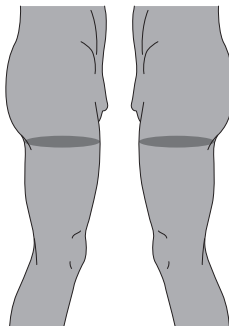
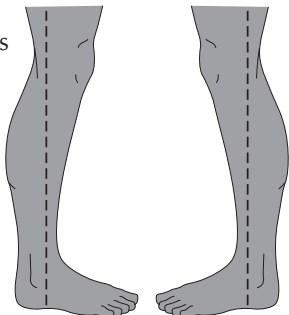
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LOWER BODY		
Left side		Right side
	Step 4 Pelvic Rotation 	
	Step 5 Buttock Crease 	
	Step 6 Thigh Bulk	
	Step 7 Genu Varum and Genu Valgum	
	Step 8 Posterior Knees	
	Step 9 Calf Bulk	

Left side		Right side
	Step 10 Calf Midline 	
	Step 11 Achilles Tendon  Normal	
	Step 12 Malleoli 	
	Step 13 Foot Position	
	Step 14 Other Observations	

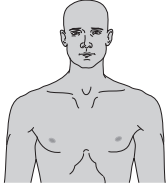
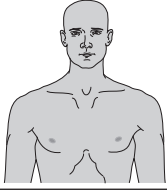
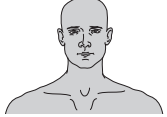
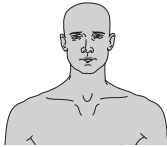
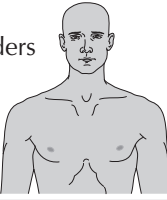
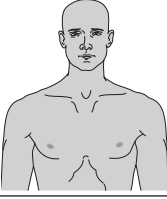
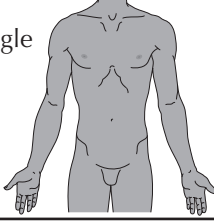
LATERAL POSTURAL ASSESSMENT CHART

UPPER BODY		
Right side		Left side
	Step 1 Head Position 	
	Step 2 Cervical Spine 	
	Step 3 Cervico- thoracic Junction 	
	Step 4 Shoulder Position 	
	Step 5 Thorax 	
	Step 6 Abdomen 	

Right side		Left side
	Step 7 Lumbar Spine 	
	Step 8 Other Observations	
LOWER BODY		
	Step 1 Pelvis 	
	Step 2 Muscle Bulk 	
	Step 3 Knees 	

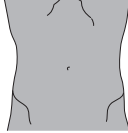
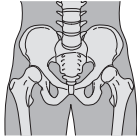
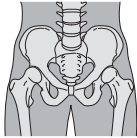
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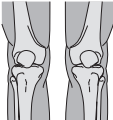
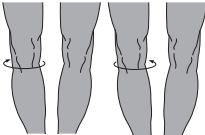
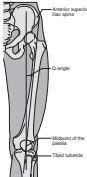
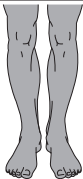
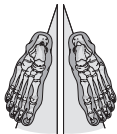
ANTERIOR POSTURAL ASSESSMENT CHART

UPPER BODY		
Right side		Left side
	Step 1 Face 	
	Step 2 Head Position 	
	Step 3 Muscle Tone 	
	Step 4 Clavicles 	
	Step 5 Shoulder Level 	
	Step 6 Rounded Shoulders 	
	Step 7 Chest 	
	Step 8 Carrying Angle 	

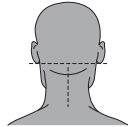
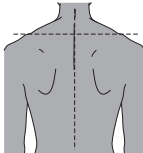
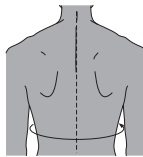
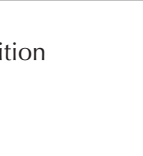
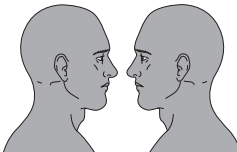
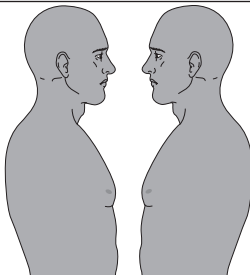
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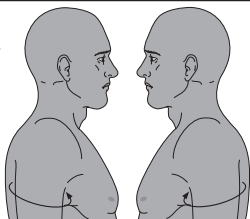
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UPPER BODY		
Right side		Left side
	Step 9 Arms 	
	Step 10 Hands and Wrists 	
	Step 11 Abdomen 	
LOWER BODY		
	Step 1 Lateral Pelvis 	
	Step 2 Rotated Pelvis 	
	Step 3 Stance 	
	Step 4 Muscle Bulk 	

Right side		Left side
	Step 5 Genu Valgum and Genu Varum 	
	Step 6 Patellar Position 	
	Step 7 Rotation at the Knee 	
	Step 8 The Q angle 	
	Step 9 Tibia 	
	Step 10 Ankles 	
	Step 11 Foot Position 	
	Step 12 Pes Planus and Pes Cavus 	
	Step 13 Other Observations	

SEATED POSTURAL ASSESSMENT CHART

POSTERIOR VIEW		
Left side		Right side
	Step 1 Head and Neck Position 	
	Step 2 Shoulder Height 	
	Step 3 Thorax 	
	Step 4 Hip and Thigh Position 	
	Step 5 Foot Position 	
LATERAL VIEW		
	Step 1 Head and Neck Position 	
	Step 2 Thorax 	

Left side		Right side	
	Step 3 Shoulder Position 		
	Step 4 Lumbar Spine, Pelvis and Hips		
	Step 5 Knees		

Answers to Quick Questions

Chapter 1

1. Factors that affect posture are structural or anatomical, age, physiological, pathological, occupation, hobbies and recreation, environmental, social and cultural, and mood and emotion.
2. Reasons for performing a postural assessment are to get more information, to save time, to establish a baseline, and to treat holistically.
3. A postural assessment might not be appropriate when treating an anxious client; a client unable to stand because of pain, illness, or instability; a client who does not understand the purpose of the assessment or who does not give consent to having one performed; or a client who would benefit from a different form of assessment, more appropriate to his condition (e.g., Parkinson's disease or following a stroke).
4. In most cases, it is important to take a medical history before carrying out a postural assessment because information may be revealed that affects whether the assessment is appropriate and safe.
5. When analysing various parts of the body and how they fit together, it is important to always take an overall view of the client because all parts are interrelated. Patients dislike being referred to as 'the knee' or 'the shoulder'.

Chapter 2

1. Useful equipment to have when carrying out a postural assessment includes a warm, private room; a full-length mirror; body crayons (and cleansing wipes); postural assessment charts; and a model skeleton.
2. Bony landmarks that are useful to identify before starting a posterior postural assessment include the medial border of the scapula, the inferior angle of the scapula, the spinous processes of the spine, the olecranon process of the elbow, the posterior superior iliac spine (PSIS), knee creases, the midline of the calf, and the midline of the Achilles tendon.
3. Any of the questions included in table 2.1 are suitable starting points for postural assessment.
4. A neutral pelvis is one in which the left and right iliac crests, left and right PSIS, and left and right ischia are level when the client is viewed posteriorly, and in which the ASIS and pubis are in the same vertical plane when the client is viewed laterally.
5. Possible contraindications to postural assessment include an inability to stand or sit because of pain, blood pressure issues, and poor balance. Check for allergies if using body crayons to mark bony landmarks.

Chapter 3

1. The right sternocleidomastoid, levator scapulae, scalenes and upper fibers of the trapezius all laterally flex the neck to the right.
2. Atrophy of shoulder muscles may result from immobility of the upper limb and conditions such as adhesive capsulitis (frozen shoulder).
3. *Winging* is a term often used to describe the way the inferior angle (and often the medial border) of the scapula tilts away from the rib cage, becoming prominent. True winging involves damage to serratus anterior or the long thoracic nerve.
4. Lateral flexion to the left and a left elevated pelvis suggests a shortened left quadratus lumborum muscle.
5. The midline of the calf might appear more lateral on one leg if the hip of that side is internally rotated or if the tibia on that side is rotated inwards with respect to the femur—or if both conditions exist.

Chapter 4

1. A forward head posture might increase the strain placed on the muscles of the posterior neck such as the levator scapulae, resulting in pain in the neck, shoulders and upper back.
2. Muscles that become shortened when the humerus is internally rotated include the subscapularis, teres major and pectoralis major.
3. Retaining static postures such as sitting at a desk or driving for long periods contribute to an increased kyphosis in the thorax.
4. When the pelvis tilts anteriorly, there is an increase in the lordotic curve of the lumbar spine.
5. A client who stands with flexed knees is likely to have shortened hamstrings.

Chapter 5

1. A steep incline in the angle of the clavicle indicates elevated shoulders and tension in the muscles associated with shoulder elevation.
2. The normal carrying angle of the elbow is 5 to 10 degrees in males and 10 to 15 degrees in females.
3. The common name for genu valgum is knock kneed; the common name for genu varum is bow legged.
4. There should be slight lateral tibial torsion in standing.
5. Endomorphs are commonly described as stocky or big boned; ectomorphs are described as skinny or gangly; and mesomorphs are described as athletic or muscular.

Chapter 6

1. When a client has a workstation positioned to the right, the muscles of the neck that might be shortened or have increased tone are the left sternocleidomastoid, right levator scapulae and right scalenes.
2. Some people passively shorten the muscles that elevate the shoulder by resting that arm on the windowsill of a vehicle or on the arm of a chair.
3. Crossing one leg over the other overcomes the anterior tilting of the pelvis and the increase in lumbar lordosis associated with this posture.
4. Hip flexor muscles are always shortened in the seated position.
5. Assuming that a client sits on a regular chair (and not with the legs outstretched, knees in extension), the soft tissues of the posterior knee, including the popliteus muscle, maintain a shortened position.

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About the Author



Jane Johnson, MSc, is co-director of the London Massage Company, England. As a chartered physiotherapist and sport massage therapist, she has been carrying out postural assessments for many years.

Johnson teaches postural assessment as a provider of continuing professional development (CPD) workshops for the Federation of Holistic Therapists (FHT). This experience has brought her into contact with thousands of therapists of all disciplines and helped inform her own practice. She is also a regular presenter at the annual Complementary and Massage Expo (CAM) held in the United Kingdom.

Johnson is a full member of the Chartered Society of Physiotherapists and is registered with the Health Professions Council. A member of the Institute of Anatomical Sciences, she has a deep interest in musculoskeletal anatomy and how newly qualified therapists can be better educated in this subject. She also is interested in the relationship between emotions and posture.

In her spare time, Johnson enjoys taking her dog for long walks, practicing wing chun kung fu, and visiting museums. She resides in London.