

# LIST OF DRAFT FIGURES AND VIDEOS

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**Figure 25.1B** Neck torsion and skull positions, Figures 64 and 65, page 219, from Kapandji, I. A. (1974). *The Physiology of the Joints (Volume 3): The Trunk and Vertebral Column (Second Edition)*. Edinburgh: Churchill Livingstone.

**Figure 25.1C** Side view of the neck muscles as shown in Figure 385 from the classic 1918 Edition of Henry Gray's *Anatomy of the Human Body*.

**Figure 25.2** Jim Ryun's head and neck position at the end of a race. Ryun's Run. In *Runner's World*,

September 2003, page 79.

**Figure 25.3** Roger Banister's head and neck position at the finish line of his successful attempt to break the four minute mile on May 6, 1954, from an AP Photo File.

**Figure 25.4** A comparison of Jim Ryun's head and neck position between left leg (frame 10) and right leg (frame 4) at the midsupport position (1970) by Phil Bath and/or Visual Track and Field Techniques, 292 So. LaClenaga Blvd., Beverly Hills, Calif. 90211.

**Figure 25.5** Five still frames (three right and two left, all at the midstance position) from a front view video clip of Usain Bolt's head while running in a **Gatorade** advertisement.

**Figure 25.6** Still frame showing tilted alignment of upper front teeth and gums of news commentator and columnist Mercedes Schlapp.

**Figure 25.7** Side view of the eye muscles, from Figure 885 in the classic 1918 Edition of Henry Gray's *Anatomy of the Human Body*.

**Video 25.1** Video clip from the same source as Figure 25.5.

**Video 25.2** Video clip of asymmetrical head motion of elite female distance runners at USA Track and Field indoor championship.

**Video 25.3** Close-up slow motion video clip of Bernard Lagat's asymmetrical head and neck motion when winning distance race at 2016 US Olympics Trials.

**Video 25.4** Video clip showing typical examples of right/left facial asymmetry.

## **Chapter 26**

**Figure 26.1** Torsional-shift anatomical asymmetries between the right and left hemispheres shown in a bottom view, Figure 4.5 from page 126, of Gazzaniga, Michael S. et al. (2014). *Cognitive Neuroscience: The Biology of the Mind* (4<sup>th</sup> Ed.). New York: W. W. Norton & Company.

**Figure 26.2** The Base of the Brain, Figure 196, page 337, torsional-shift anatomical asymmetries between the right and left hemispheres, Henry Gray (1858). *Gray's Anatomy*. Illustrated by Henry Vandyke Carter.

**Figure 26.3** Photo of computer simulation of human brain concussion with intense sideways motion shown in frontal plane cross-section causing maximum tissue stretch in the central brain, from a TED Talk titled *Why Helmets don't prevent concussions – and what might* by David Camarillo, Ph.D. of Stanford University on April 24, 2016.

**Figure 26.4** Photo of frontal plane cross-section of a normal human brain showing in color the major communication network wiring with the red central portion the principal connection between the right and left hemispheres.

**Figure 26.5** Same photo as previous figure (but without network coloring) showing the corpus

callosum (circled in red), the physical portion of the brain that provides a fiber bundle connecting the two hemispheres.

**Figure 26.6** A similar photo like the previous two figures, but of a retired NFL football player who suffered from CTE, his highly abnormal brain indicating extreme deterioration of the corpus callosum.

**Figure 26.7** U. S. Patent Number US 8,732,868, issued by the U. S. Patent and Trademark Office on May 27, 2014, titled *Helmet and/or Helmet Liner with at least One Internal Flexibility Sipe with an Attachment to Control and Absorb the Impact of Torsional Or Shear Forces*.

**VIDEO 26.1** Brief video clip showing the dorsolateral prefrontal cortex on the left hemisphere.

**VIDEO 26.2** Human brain tissue stretch simulation, from a TED Talk titled *Why Helmets don't prevent concussions – and what might* by David Camarillo, Ph.D. of Stanford University was made April 24, 2016 (at [www.ted.com](http://www.ted.com)).

**VIDEO 26.3** The human brain's corpus callosum and CTE, from the same reference as VIDEO 26.1 above.

**VIDEO 26.4** A slow motion video clip of the face of Dahne Schippers, an Olympic Champion 200m sprinter.

## **Chapter 27**

**Figure 27.1** Top view of Einstein's brain, showing asymmetrical hemispheres with the right shifted forward, from Figure 1 of Dean Falk, Frederick E. Lepore, and Adrienne Noe (2013). The cerebral cortex of Albert Einstein. *Brain* 136: page 1306.

**Figure 27.2** Front view of Einstein's brain, showing asymmetrical hemispheres with the right shifted forward, from Figure 5 of Dean Falk, Frederick E. Lepore, and Adrienne Noe (2013). The cerebral cortex of Albert Einstein. *Brain* 136: page 1310.

**Figure 27.3** The asymmetrically twisted body of wheel-chair-bound Steven Hawking from **Hawking** (2014), a PBS biography of his life.

**Figures 27.4** A photo of Steven Hawking's college age asymmetrical standing posture, with higher right shoulder from **Hawking** (2014), a PBS biography of his life.

**Figure 27.5** The asymmetrical eyes of Steven Hawking with larger left eye, from *Genius By Steven Hawking* (2016), a PBS series.

**Figure 27.6** Alan Turing as a highly elite adult runner, finishing second in a 1946 three mile race, photo and page 444 of Andrew Hodges' *Alan Turing: The Enigma* (1983). Princeton and Oxford: Princeton University Press.

## **Chapter 29**

**Figure 29.1** Comparison of skeletons with naturally erect posture and poor posture, from Mary

Bond's *The New Rules of Posture: How to Sit, Stand, and Move* (2006) Healing Arts Press. And at: <http://www.washingtonpost.com/wp-dyn/content/graphic/2007/04/16/GR2007041600761.html>.

**Figure 29.2** Figure 2A and 2B of Ron Hruska's Pelvic stability influences lower-extremity kinematics, in *Biomechanics*, June 1998, page 24, reprinted in Mary Lloyd Ireland's The female ACL: why is it more prone to injury? In *Orthop Clin N Am* 33 (2002). page 642.

### **Chapter 32**

**Figure 32.1** U. S. Patent Number US 9,030,335, issued by the U. S. Patent and Trademark Office on May 12, 2015, titled *Smartphone App-Controlled Configuration of Footwear Soles Using Sensors in the Smartphone and the Soles* by Frampton E. Ellis.

### **Chapter 34**

**Figure 34.1** U. S. Patent Number US 9,009,809, which issued by the USPTO on April 14, 2015, is titled *Computer or Microchip with a Secure System BIOS and a Secure Control Bus Connecting a Central Controller to Many Network-Connected Microprocessors and Volatile RAM*.

### **Chapter 36**

**Figure 36.1** Photo of identical twin young boys from **PBS** Ken Burns Presents *Cancer: the Emperor of All Maladies (2015)*, A Film by Barak Goodman.

**Figure 36.2** Xray from “Brain Cancers Reveal Novel Genetic Disruption in DNA” (December 23, 15) in *The New York Times*.

### **Chapter 40**

**Figure 40.1** Cartoon on Vikings stretching before an attack, from Gary Larson (1985), *Valley of the Far Side*. Page 44, Kansas City: Andrews, McMeel, & Parker..

### **Chapter 43**

**Figure 43.1** Kevin Durant's basketball shoe showing substantial lack of lateral stability, from *The Offseason: Kevin Durant* (2014) on **HBO** (11/29/14).

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