Prepare for Your Future Career & Practice Solving Real-World Problems

The authors of this text, Elaine Marieb and Katja Hoehn, share insights from their own clinical experience to help you prepare for your future career in health care. All clinical examples and applications are signaled with an easy-to-find "Clinical" label.

Homeostatic Imbalance discussions alert you to the consequences of body systems not functioning optimally. Relevant photos have been added to selected discussions for visual reinforcement.

NEW! Discussions have been added on Marfan syndrome, brittle bone disease, tetanus, and anxiety disorders.

HOMEOSTATIC IMBALANCE 4.2 — **CLINICAL**

Marfan syndrome is an inherited disorder that causes a change in the types of proteins that comprise elastic fibers. As a result of this change, the elasticity in tissues is reduced, leading to the overgrowth (aortic enlargement and long arms, legs, and fingers) and instability (lung collapse and eye problems) of tissues. Although people suffering from Marfan syndrome are born with the condition, not all of them show symptoms at birth or during childhood; some only develop symptoms as adults.

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Clinical Case Studies are provided at the end of Chapters 5–29 and challenge you to apply your knowledge to realistic clinical scenarios.

CLINICAL CASE STUDY

One-Year-Old Girl with Retarded Growth

Miriam gave birth to a twin boy and girl a year ago. She is concerned about Theresa, her daughter, since her growth and development is much slower than that of her brother. Miriam visits a pediatric outpatient clinic, where she informs the physician that, apart from having retarded growth, Theresa has a poor appetite, suffers from constipation, and is lethargic. The physician orders blood tests to check Theresa's growth hormone

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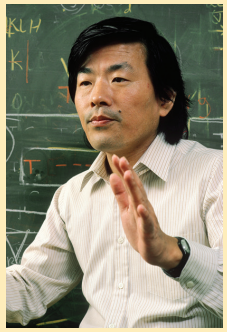
NEW! Boxes on scientists feature details about the lives and works of eminent scientists. These will show you the human side of science.

Susumu Tonegawa (b. 1939) is a Japanese scientist who won the Nobel Prize in Physiology or Medicine in 1987 for elucidating the genetic mechanisms underlying adaptive immunity. A problem in adaptive immunity was that, although the presence of millions of different antibody proteins was known, there weren't enough genes in the human genome to account for these. So how were all these different antibodies produced? By comparing the DNA of mature and immature B cells, Tonegawa discovered that the regions of DNA that produce antibodies become greatly rearranged as the B cell matures, which is how a small number of antibody-producing genes generate the huge variety of antibodies seen.



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