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Principles of evolutionary medicine

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Abstrak

Evolutionary science is critical for an understanding of integrated human biology and is increasingly recognized as a core discipline by medical and public health professionals. Advances in the fields of genomics, epigenetics, developmental biology, and epidemiology have led to the growing realization that incorporation of evolutionary thinking is essential for medicine to achieve its full potential. This revised and updated second edition of the first comprehensive textbook of evolutionary medicine explains the principles of evolutionary biology from a medical perspective and focuses on how medicine and public health might utilize evolutionary thinking. The first part of the book provides a summary of the evolutionary theory relevant to understanding human health and disease, using examples specifically relevant to medicine. The second part describes the application of evolutionary principles to understanding particular aspects of human medicine: reproduction, metabolism, behavior, the implications of our coevolution with micro-organisms, and cancer. The two parts are bridged by a chapter that details pathways by which evolutionary processes affect disease risk and symptoms, and how hypotheses in evolutionary medicine can be tested. A further chapter illustrates the application of evolutionary biology to medicine and public health, with a number of new clinical examples. The final chapter uses a historical perspective to consider the ethical and societal issues arising from the interface between evolution and medicine.