

Answers To Evolve Case Study Osteoporosis

Bisphosphonate

fracture in steroid induced osteoporosis. Bisphosphonates are recommended as a first line treatments for post-menopausal osteoporosis. Long-term treatment with

Bisphosphonates are a class of drugs that prevent the loss of bone density, used to treat osteoporosis and similar diseases. They are the most commonly prescribed to treat osteoporosis.

Evidence shows that they reduce the risk of fracture in post-menopausal women with osteoporosis.

Bone tissue undergoes constant remodeling and is kept in balance (homeostasis) by osteoblasts creating bone and osteoclasts destroying bone. Bisphosphonates inhibit the digestion of bone by encouraging osteoclasts to undergo apoptosis, or cell death, thereby slowing bone loss.

The uses of bisphosphonates include the prevention and treatment of osteoporosis, Paget's disease of bone, bone metastasis (with or without hypercalcemia), multiple myeloma, primary hyperparathyroidism, osteogenesis imperfecta, fibrous dysplasia...

Osteogenesis imperfecta

forms of osteoporosis, such as iatrogenic osteoporosis, idiopathic juvenile osteoporosis, disuse osteoporosis and exercise-related osteoporosis should also

Osteogenesis imperfecta (IPA: ; OI), colloquially known as brittle bone disease, is a group of genetic disorders that all result in bones that break easily. The range of symptoms—on the skeleton as well as on the body's other organs—may be mild to severe. Symptoms found in various types of OI include whites of the eye (sclerae) that are blue instead, short stature, loose joints, hearing loss, breathing problems and problems with the teeth (dentinogenesis imperfecta). Potentially life-threatening complications, all of which become more common in more severe OI, include: tearing (dissection) of the major arteries, such as the aorta; pulmonary valve insufficiency secondary to distortion of the ribcage; and basilar invagination.

The underlying mechanism is usually a problem with connective tissue...

Antagonistic pleiotropy hypothesis

state); cystic fibrosis (increased fertility); and osteoporosis in old age (reduced risk of osteoporosis in youth). Sexual selection is a process of natural

The antagonistic pleiotropy hypothesis (APT) is a theory in evolutionary biology that suggests certain genes may confer beneficial effects early in an organism's life, enhancing reproductive success, while also causing detrimental effects later in life, contributing to the aging process. Such as APOEε4 conferring early-life protection against infections and malnutrition while causing Alzheimer's disease later in life and being heterozygous for sickle cell trait confers protection against malaria while causing sickle cell disease in homozygotes.

APT was first proposed in a 1952 paper on the evolutionary theory of ageing by Peter Medawar and developed further in a paper by George C. Williams in 1957 as an explanation for senescence. Pleiotropy is the phenomenon where a single gene influences...

Vertically transmitted infection

transmission tends to evolve benign symbiosis, so is a critical concept for evolutionary medicine. Because a pathogen's ability to pass from mother to child depends

A vertically transmitted infection is an infection caused by pathogenic bacteria or viruses that use mother-to-child transmission, that is, transmission directly from the mother to an embryo, fetus, or baby

during pregnancy or childbirth. It can occur when the mother has a pre-existing disease or becomes infected during pregnancy. Nutritional deficiencies may exacerbate the risks of perinatal infections. Vertical transmission is important for the mathematical modelling of infectious diseases, especially for diseases of animals with large litter sizes, as it causes a wave of new infectious individuals.

Kidney transplantation

weight gain, osteoporosis, muscle weakness, hypercholesterolemia, and cataract formation. Prednisolone alone is usually inadequate to prevent rejection

Kidney transplant or renal transplant is the organ transplant of a kidney into a patient with end-stage kidney disease (ESRD). Kidney transplant is typically classified as deceased-donor (formerly known as cadaveric) or living-donor transplantation depending on the source of the donor organ. Living-donor kidney transplants are further characterized as genetically related (living-related) or non-related (living-unrelated) transplants, depending on whether a biological relationship exists between the donor and recipient. The first successful kidney transplant was performed in 1954 by a team including Joseph Murray, the recipient's surgeon, and Hartwell Harrison, surgeon for the donor. Murray was awarded a Nobel Prize in Physiology or Medicine in 1990 for this and other work. In 2018, an estimated...

Disease management (health)

mellitus, asthma, cancer, arthritis, clinical depression, sleep apnea, osteoporosis, and other common ailments. In the United States, disease management

Disease management is defined as "a system of coordinated healthcare interventions and communications for populations with conditions in which patient self-care efforts are significant."

For people who can access healthcare practitioners or peer support, disease management is the process whereby persons with long-term conditions (and often family/friend/carers) share knowledge, responsibility and care plans with practitioners and/or peers. To be effective it requires whole system implementation with community social support networks, a range of satisfying occupations and activities relevant to the context, clinical professionals willing to act as partners or coaches, and on-line resources which are verified and relevant to the country and context.

Knowledge sharing, knowledge building and a...

Gluten-related disorders

of absorption of nutrients, reduced quality of life, iron deficiency, osteoporosis, an increased risk of intestinal lymphomas and greater mortality. CD

Gluten-related disorders is the term for the diseases triggered by gluten, including celiac disease (CD), non-celiac gluten sensitivity (NCGS), gluten ataxia, dermatitis herpetiformis (DH) and wheat allergy. The umbrella category has also been referred to as gluten intolerance, though a multi-disciplinary physician-led study, based in part on the 2011 International Coeliac Disease Symposium, concluded that the use of this term should be avoided due to a lack of specificity.

Gluten is a group of proteins, such as prolamins and glutelins, stored with starch in the endosperm of various cereal (grass) grains.

As of 2017, gluten-related disorders were increasing in frequency in different geographic areas. The increase might be explained by the popularity of the Western diet, the expanded reach...

Adoption

individuals, is an evolved fit between innate behavior patterns of all human infants and equally evolved responses of human adults to those infant behaviors

Adoption is a process whereby a person assumes the parenting of another, usually a child, from that person's biological or legal parent or parents. Legal adoptions permanently transfer all rights and responsibilities, along with filiation, from the biological parents to the adoptive parents.

Unlike guardianship or other systems designed for the care of the young, adoption is intended to effect a permanent change in status and as such requires societal recognition, either through legal or religious sanction. Historically, some societies have enacted specific laws governing adoption, while others used less formal means (notably contracts that specified inheritance rights and parental responsibilities without an accompanying transfer of filiation). Modern systems of adoption, arising in the 20th...

Cycling

"Low bone mineral density in highly trained male master cyclists". Osteoporosis International. 14 (8): 644-9. doi:10.1007/s00198-003-1418-z. PMID 12856112

Cycling, also known as bicycling or biking, is the activity of riding a bicycle or other types of pedal-driven human-powered vehicles such as balance bikes, unicycles, tricycles, and quadricycles. Cycling is practised around the world for purposes including transport, recreation, exercise, and competitive sport.

Gluten-free diet

disease may cause malabsorption, reduced quality of life, iron deficiency, osteoporosis, obstetric complications (stillbirth, intrauterine growth restriction

A gluten-free diet (GFD) is a nutritional plan that strictly excludes gluten, which is a mixture of prolamin proteins found in wheat (and all of its species and hybrids, such as spelt, kamut, and triticale), as well as barley, rye, and oats. The inclusion of oats in a gluten-free diet remains controversial, and may depend on the oat cultivar and the frequent cross-contamination with other gluten-containing cereals.

Gluten may cause both gastrointestinal and systemic symptoms for those with gluten-related disorders, including coeliac disease (CD), non-coeliac gluten sensitivity (NCGS), and wheat allergy. In these people, the gluten-free diet is demonstrated as an effective treatment, but several studies show that about 79% of the people with coeliac disease have an incomplete recovery of the...

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