

## OS - Osteoporosis

### OS-AP ANATOMY AND PHYSIOLOGY

**OUTCOME:** The patient/family will understand anatomy and physiology as it relates to osteoporosis.

**STANDARDS:**

1. Explain the normal anatomy and physiology of the bones.
2. Discuss the changes to anatomy and physiology as a result of osteoporosis.
3. Discuss the impact of these changes on the patient's health or well-being.

### OS-C COMPLICATIONS

**OUTCOME:** The patient/family will understand the complications of untreated or advanced osteoporosis.

**STANDARDS:**

1. Explain that the most common complication of untreated or advanced osteoporosis is fracture.
  - a. Explain that spinal compression fractures are common and result in back pain and the typical "buffalo hump" often seen in elderly patients.
  - b. Explain that fractures of the long bones including fractures of the hip are common and may be debilitating.
2. Explain that pain (especially early morning low back pain) may be a symptom of osteoporosis even in the absence of demonstrable fractures. This can be mistaken for arthritis.
3. Explain that osteoporosis may cause tooth loss secondary to gingival bone loss. Stress the importance of good oral hygiene.

### OS-CUL CULTURAL/SPIRITUAL ASPECTS OF HEALTH

**OUTCOME:** The patient/family will understand the impact and influences that cultural and spiritual traditions, practices, and beliefs have on health and wellness.

**STANDARDS:**

1. Discuss the potential role of cultural/spiritual traditions, practices and beliefs in achieving and maintaining health and wellness. Refer to clergy services, traditional healers, or other culturally appropriate resources.
2. Explain that traditional medicines/treatments should be reviewed with the healthcare provider to determine if there are positive or detrimental interactions

with prescribed treatment. Explain that the medical treatment plan must be followed as prescribed to be effective.

## **OS-DP      DISEASE PROCESS**

**OUTCOME:** The patient will understand some of the causes and symptoms of osteoporosis.

### **STANDARDS:**

1. Explain that humans reach their peak bone mass at about 30. After age 30 progressive bone loss typically occurs.
2. Explain that bone loss may be slowed by consistent daily exercise and appropriate calcium intake. **Refer to OS-N.**
3. State that progressive bone loss may result in fractures and/or pain. **Refer to OS-C.**
4. Discuss risk factors for earlier onset or more severe osteoporosis, such as petite frame, sedentary lifestyle, smoking, inadequate calcium intake, caffeine intake.
5. Discuss the current state of understanding about the role of estrogen and other hormones as they relate to osteoporosis.

## **OS-EQ      EQUIPMENT**

**OUTCOME:** The patient/family/caregiver will understand and demonstrate (when appropriate) the proper use and care of assisted medical devices/equipment.

### **STANDARDS:**

1. Discuss the indications for and benefits of the prescribed medical equipment.
2. Discuss the types and the features of the assisted medical devices/equipment as appropriate.
3. Discuss and/or demonstrate the proper use, care, and cleaning of assisted medical devices/equipment.
4. Explain that the patient/family/caregiver will demonstrate the proper use of the assisted medical devices/equipment.
5. Discuss the signs of assisted medical devices/equipment malfunction and the proper action in case of malfunction as appropriate.

## **OS-EX      EXERCISE**

**OUTCOME:** The patient/family/caregiver will understand the role of increased physical activity in this patient's disease process and will make a plan to increase regular activity by an agreed-upon amount.

**STANDARDS:**

1. Discuss medical clearance issues for physical activity.
2. Discuss obstacles to a personal exercise plan and solutions to those obstacles, and assist the patient in developing a personal exercise plan. **Refer to HPDP-EX.**
3. Explain that exercise should be consistent and of sufficient duration and intensity to obtain the desired outcome. Explain that exercise decreases bone loss by repetitive use of muscle groups. This repetitive use of muscles causes stress on the bones resulting in build-up of bone mass.
4. Discuss the benefits of any exercise, such as improvement in well being, stress reduction, sleep, bowel regulation, and self image. Explain that exercises involving weight bearing and many muscle groups are more beneficial. Some examples of weight bearing exercises are walking, dancing, bowling, tennis, basketball, volleyball, soccer, and for elderly patients using hand-held weights.
5. Refer to community resources as appropriate.

**OS-FU FOLLOW-UP**

**OUTCOME:** The patient/family will understand the importance of follow-up in the treatment of osteoporosis.

**STANDARDS:**

1. Discuss the importance of follow-up care.
2. Discuss the procedure for obtaining follow-up appointments and that follow-up appointments should be kept.
3. Emphasize that full participation in the treatment plan is the responsibility of the patient/family.
4. Discuss signs/symptoms that should prompt immediate follow-up.
5. Discuss the availability of community resources and support services and refer as appropriate.

**OS-HM HOME MANAGEMENT**

**OUTCOME:** The patient/family will understand the home management plan needed to maintain function and optimal health.

**STANDARDS:**

1. Review the lifestyle areas that may require adaptation, e.g., diet, exercise.
2. Stress the importance of a calcium rich diet, regular weight-bearing exercise, decreased stress, not smoking, reduced alcohol intake, and estrogen replacement therapy as appropriate.

3. Explain to the patient/family members the importance of proper body mechanics and lifting techniques to avoid injury.
4. Assist family/patient to identify ways to adapt the home to improve safety and prevent injury, e.g., remove throw rugs, install bars in tubs and showers, secure electrical cords.

**OS-L            LITERATURE**

**OUTCOME:** The patient/family will receive literature about osteoporosis.

**STANDARDS:**

1. Provide the patient/family with literature on osteoporosis.
2. Discuss the content of the literature.

**OS-M            MEDICATIONS**

**OUTCOME:** The patient/family will understand the purpose, proper use, and expected outcomes of prescribed drug therapy.

**STANDARDS:**

1. Describe the name, strength, purpose, dosing directions, and storage of the medication.
2. Discuss the current knowledge about the correct amount of calcium intake for a patient of this age. Discuss ways of obtaining calcium, e.g., supplements, dietary intake, calcium based antacids.
  - a. As of May 2000 the following are believed to be the correct calcium needs for various age groups as shown in the following table.

Years Old	Dosage
7-9	700 mg
10-12	1000-1400 mg
14-16	1200-1400 mg
19-49	1000 mg
50+	1000-1500 mg

- b. Explain that Vitamin D improves calcium absorption. Discuss ways to get vitamin D, e.g., supplementation, sunlight exposure.
3. Discuss the risks, benefits, and common or important side effects of the medication and follow up as appropriate. Discuss any significant drug/drug, drug/food, and alcohol interactions, as appropriate.
  - a. Discuss medications which may increase the risk for osteoporosis, e.g., thiazide diuretics, magnesium, steroid medications.
4. Discuss the importance of keeping a list of all current prescriptions and over-the-counter medicines, vitamins, herbs, traditional remedies, and supplements.

Encourage the patient to bring this list and pill bottles to appointments for medication reconciliation.

## **OS-MNT      MEDICAL NUTRITION THERAPY**

**OUTCOME:** The patient/family will understand the specific nutritional intervention(s) needed for treatment or management of osteoporosis.

### **STANDARDS:**

1. Explain that Medical Nutrition Therapy (MNT) is a systematic nutrition care process provided by a Registered Dietitian (RD) that consists of the following:
  - a. Assessment of the nutrition related condition.
  - b. Identification of the patient's nutritional problem.
  - c. Identification of a specific nutrition intervention therapy plan.
  - d. Evaluation of the patient's nutritional care outcomes.
  - e. Reassessment as needed.
2. Review the basic nutrition recommendations for the treatment plan.
3. Discuss the benefits of nutrition and exercise to health and well-being.
4. Assist the patient/family in developing an appropriate nutrition care plan.
5. Refer to other providers or community resources as needed.

## **OS-N            NUTRITION**

**OUTCOME:** The patient/family will understand the role of nutrition and osteoporosis.

### **STANDARDS:**

1. Discuss that intake of calcium such as dairy products, some greens like turnip greens, kale, broccoli, collard greens and mustard greens, fish with bones like sardines and salmon, and calcium fortified foods, and soy will reduce the risk of developing osteoporosis.
2. Explain that carbonated beverages, very high protein diets, or caffeine may result in an overall loss of calcium from the body.
3. Explain that adequate intake of Vitamin D is needed to absorb calcium in the diet.
4. Refer to a registered dietitian for MNT as appropriate.

## **OS-P            PREVENTION**

**OUTCOME:** The patient/family will be aware of the methods for reducing the development of osteoporosis.

**STANDARDS:**

1. Explain how regular exercise increases bone mass thereby reducing the risk of osteoporosis. Regular exercise after age 30 will decrease the rate of bone loss and in some cases may reverse bone loss.
2. Explain that daily intake of calcium will help prevent bone loss and if adequate calcium intake is accomplished in childhood and adolescence there will be a larger peak bone mass.
3. Explain the current knowledge about appropriate intake of calcium for various age levels. **Refer to OS-M.**
4. Explain that certain illnesses, medications, and other factors can increase the risk of developing osteoporosis.

**OS-PM      PAIN MANAGEMENT**

**OUTCOME:** The patient/family will understand the plan for pain management.

**STANDARDS:**

1. Explain the pain scale and how it is used to assess the degree of pain individuals are experiencing. Discuss it's use in developing a plan to manage pain.
2. Explain that pain management is specific to the disease process of this particular diagnosis and may be multifaceted. **Refer to PM.**
3. Explain that there are pharmacological and non-pharmacological that may be helpful in pain management.

**OS-TE      TESTS**

**OUTCOME:** The patient/family will understand the test(s) to be performed, the potential risks, the expected benefits, and the risks of non-testing.

**STANDARDS:**

1. Explain test(s) that have been ordered (explain as appropriate):
  - a. method of testing
  - b. necessity, benefits, and risks of test(s) to be performed
  - c. any potential risk of refusal of recommended test(s)
  - d. any advance preparation and instructions required for the test(s)
  - e. how the results will be used for future medical decision-making
  - f. how to obtain the results of the test
2. Explain test results:
  - a. meaning of the test results

- b. follow-up tests may be ordered based on the results
- c. how results will impact or effect the treatment plan
- d. recommendations based on the test results

**OS-TX      TREATMENT**

**OUTCOME:** The patient will understand the treatment plan.

**STANDARDS:**

1. Discuss the importance of fully participating in the treatment plan, including scheduled follow-up.
2. Explain that the major treatment for osteoporosis is physical activity and appropriate intake of calcium and Vitamin D.
3. Explain that some patients will require other medications in addition to the above mentioned treatment. **Refer to OS-M.**