



# Multiple Myeloma

## What is Multiple Myeloma?

Multiple myeloma is a cancer of plasma cells, which are a type of white blood cell present in bone marrow. Multiple myeloma occurs when plasma cells grow rapidly and produce a tumor. The tumor interferes with the normal blood-forming functions of the bone marrow and erodes the bone. The disease is called multiple myeloma because myeloma cells can occur in multiple bone marrow sites in the body.

## What are the Risk Factors for Multiple Myeloma?

Risk factors increase a person's chance of getting a disease. However, having a risk factor does not mean you will get the disease. Most people who develop multiple myeloma have no clearly identifiable risk factors for the disease. Some factors that may increase your risk of multiple myeloma include the following:

- ◆ Over 50 years
- ◆ Male
- ◆ Non-Hispanic black
- ◆ History of a monoclonal gammopathy of undetermined significance, a condition marked by plasma cells producing excess amounts of an antibody protein.
- ◆ Obesity
- ◆ Exposure to radiation
- ◆ Working in petroleum-related industries.

- ◆ Unexplained bone fractures
- ◆ Anemia and weakness
- ◆ Excessive thirst and urination
- ◆ Repeated infections, such as pneumonia, bladder or kidney infection, or sinusitis
- ◆ Weight loss
- ◆ Weakness or numbness in the legs

## What are the Symptoms of Multiple Myeloma?

Multiple myeloma may not cause symptoms in its early stages, but as the disease progresses the following may occur:

- ◆ Bone pain, particularly in the back and ribs

## Who Gets Multiple Myeloma?

An incidence rate is the rate at which new cancer cases occur in a population. In California, Multiple myeloma incidence rates have remained steady over the past two decades. In California, the five-year age-adjusted incidence rate for multiple myeloma is 5.2 per 100,000 population.

Arnold Schwarzenegger, Governor  
 State of California  
 Kimberly Belshé, Secretary  
 California Health and Human Services  
 Agency  
 Mark B. Horton, MD, MSPH, Director  
 California Department of Public Health

- ◆ Approximately 1,600 new cases of multiple myeloma are diagnosed each year in California (all races combined).
- ◆ Males are affected by multiple myeloma more often than female.
- ◆ Risk is highest among non-Hispanic blacks.
- ◆ Multiple myeloma typically occurs in people older than 50, with most cases developing in between 75 to 80.

## What are the Treatments for Multiple Myeloma?

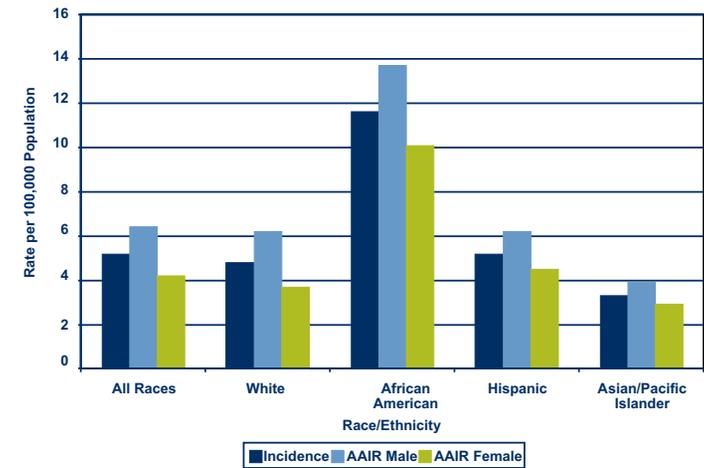
Treatment recommended for multiple myeloma depends on several factors, including whether the patient is symptomatic, the age of the patient, and the general health of the patient. There is no cure for multiple myeloma, but with good treatment results the patient can return to near-normal activity levels. Chemotherapy is a commonly used method for treating multiple myeloma. Another treatment option can be stem cell transplant, a method of chemotherapy where blood-forming cells are destroyed and later replaced by stem cells of the patient or donor through an infusion.

## Who Survives Multiple Myeloma?

Statistics regarding survival from multiple myeloma are usually reported as five-year relative survival rates. The five-year multiple myeloma survival rate is the percentage of people who are alive five years after a multiple myeloma diagnosis, whether they are disease free, or are receiving treatment for the cancer. In California, the five-year relative, multiple myeloma survival rate for 1994-2005 was 32.5%. In general, the multiple myeloma survival rate will depend on:

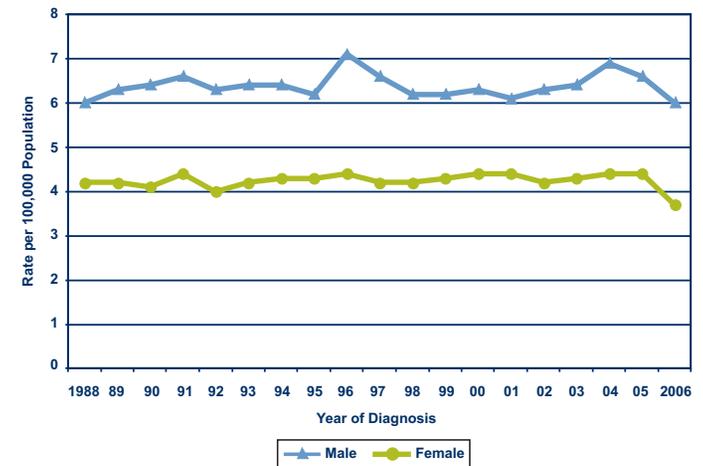
- ◆ the stage of multiple myeloma when diagnosis was made
- ◆ whether a certain immunoglobulin (antibody) is present
- ◆ whether the kidney is damaged
- ◆ whether the cancer responds to initial treatment or returns
- ◆ the patient's age and general health.

Multiple Myeloma Five-Year Age-Adjusted Incidence Rates (AAIR), by Race/Ethnicity and Sex, California, 2002-2006



Source: California Cancer Registry, California Department of Public Health.

Age-Adjusted Multiple Myeloma Incidence Rates by Sex and Year of Diagnosis, California, 2002-2006



Source: California Cancer Registry, California Department of Public Health.