

Class Starters & Enders

Making the Most of Instructional Time Five Minute Lessons

Class Starters and Enders help utilize the last minutes of class when a lesson ends but there is not enough time to start another, or for an interest approach at the beginning of class. Mini-lessons correlate to GPS in the programs areas below.

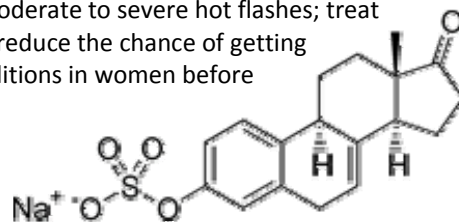
PREgnant MAREs' urINe

Program Areas: Healthcare and Agriculture

Instructions: Read the material and make notes of important points, answer questions and be ready to discuss this topic.

A Drug from Pregnant Mares' Urine

Premarin is the commercial name for a compound drug consisting primarily of conjugated **estrogens** isolated from **mares'** urine. It has been manufactured by Wyeth Pharmaceuticals, a part of Pfizer, since 1942. It is available in oral, **intravenous**, and **topical** form. Premarin may be given to post-menopausal women reduce moderate to severe hot flashes; treat moderate to severe dryness, itching, and burning around the genitals; and help reduce the chance of getting **osteoporosis** from menopause. Premarin may also be used to treat certain conditions in women before **menopause** if their **ovaries** do not make enough estrogen naturally.



The chemical formula for Estrone – Premarin's main component, is $C_{18}H_{21}NaO_5S$.

Legal and Ethical Considerations

In 1942, when Premarin was first produced, many farms were breeding large amounts of **foals** because more pregnant mares meant more urine and more income. Many of these farms used **draft mares** because the larger horses produced more urine. However, most of the draft foals were unwanted. Because of the looser standards of PMU production and collection during that time period, a lot of ethical considerations were raised out of concern for the welfare of the mares and foals involved. Animal rights groups and those opposing the industry claim animal husbandry and urine collection methods used in Premarin's production cause undue stress and suffering to the mares involved. Allegations of abuse include concern over stall size, access to water, exercise, cruel treatment, collection systems, and continuous breeding cycles resulting in **premature** death for thousands of mares and foals.

Lowering the Dose – and the Consequences

Research indicating lower doses of the drug might be safer greatly affected the industry. With a lesser quantity of urine needed for the production of Premarin, farmers were no longer limited to using only draft horses. Instead, producers focus on breeding mares to produce both urine and saleable foals. As a result, some facilities reduced the number of mares contained on-site and other aspects of the industry were updated. The "Recommended Code of Practice for the Care and Handling of Horses in PMU Operations" provides a set of regulations for producers to follow.

Review

1. When was Premarin first produced?
2. What document sets the regulations for PMU Operations?
3. Animal rights groups claim that Premarin's production cause undue _____ and _____ to the mares.
4. What type of mare was used in the beginnings of the PMU industry?
5. What two things do modern PMU ranchers rely on selling?
6. Name two conditions Premarin is designed to treat.
7. What type of mare was originally used to produce Premarin?
8. List three concerns animal rights groups have with Premarin's production methods.
9. What is the main component of Premarin?
10. How did research promoting lower dosages of Premarin affect the industry?

Language Connection

Define the following terms.

Draft Mares
Estrogen
Foals
Intravenous
Mare
Menopause
Osteoporosis
Ovaries
Premature
Topical

Georgia CTAE Resource Network - Written by Alyssa Elrod, Dallas Duncan and Frank Flanders, Ed.D.

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