



American Academy of
Orthopaedic Surgeons®

AAOS

American Association of
Orthopaedic Surgeons

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August 31, 2000

Jane E. Henney, MD
Commissioner
Food and Drug Administration (FDA)
Rockville, Maryland 20852

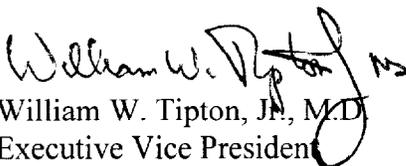
Dear Dr. Henney:

The American Academy of Orthopaedic Surgeons (AAOS), representing over 16,000 Board certified orthopaedic surgeons, welcomes this opportunity to comment on Human Bone Allograft: Manipulation and Homologous Use in Spine and Other Orthopedic Reconstruction and Repair. (Public Meeting Published in the Federal Register on July 18, 2000. [Docket No. 00N-1380]).

The AAOS shares the concerns of the FDA to ensure patient safety in the use of allograft bone and tissue products. While some governmental oversight may be necessary, the AAOS believes that the FDA must find the appropriate level of regulation to assure that bone and tissue allograft products are available to patients when they are needed. The AAOS firmly believes that human bone allograft should be considered tissue, under the purview of the Center for Biologics Evaluation and Research (CBER). We have included a statement that summarizes the presentations of Kenneth A. Jaffe, MD and Cato T. Laurencin, MD, PhD at the Human Bone Allograft open public meeting held on August, 2, 2000 in Bethesda, MD.

The AAOS looks forward to working with the FDA on bone and tissue allograft initiatives.

Sincerely,


William W. Tipton, Jr., M.D.
Executive Vice President

cc: Kathy Eberhart, CBER

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Human Bone Allograft: Manipulation and Homologous Use in Spine and Other Orthopedic Reconstruction and Repair

**Summary of the Presentations of
Kenneth A. Jaffe, MD Associate Professor of Surgery,
University of Alabama at Birmingham School of Medicine
and
Cato T. Laurencin, MD, PhD, Helen I. Moorehead Professor of
Chemical Engineering, Drexel University, Philadelphia, PA,
Clinical Associate Professor of Orthopaedic Surgery,
MCP/Hahnemann School of Medicine, Philadelphia, PA**

**Food and Drug Administration
Open Public Meeting
Bethesda, Maryland
August 2, 2000**



The American Academy of Orthopaedic Surgeons (AAOS), representing more than 16,000 Board certified orthopaedic surgeons, shares the concerns of the Food and Drug Administration (FDA) to ensure patient safety in the use of allograft bone and tissue products. While some governmental oversight may be necessary, the AAOS believes that the FDA must find the appropriate level of regulation to assure that bone and tissue allograft products are available to patients when they are needed. The AAOS firmly maintains that human bone allograft and products developed from human bone allograft should be considered tissue, under the purview of the Center for Biologics Evaluation and Research (CBER). In accordance with the questions posed by the FDA, the AAOS shares its perspective on the following issues:

Minimal Manipulation Definition

The processing of cells and nonstructural tissues should be categorized as minimal manipulation when processing does not alter the original relevant characteristics of the cells and tissues that relate to the tissue's utility for reconstruction, repair, or replacement. Examples of minimal manipulation include cutting, grinding, and shaping of tissue, soaking tissues in an antibiotic solution, sterilization, cell separation, lyophilization, cryopreservation and freezing.

Tissues are considered more than minimal manipulation when they are highly processed, used for another purpose than normal function, when combined with non-tissue components, or when used for metabolic purposes. Additionally, cell expansion, encapsulation, activation, and gene modification are examples of more than minimal manipulation.

Homologous Use Definition

Homologous use in cellular and non-structural tissue-based products occurs when cells or tissues are used to perform the same basic function they fulfill in its native state in the donor. Structural tissue used to replace structural tissue is homologous use. Bone allograft obtained from a long bone and used in a vertebra is an example of homologous use.

The highest standard of tissue and bone replacement continues to be an autograft. Bone is frequently taken from the iliac crest of a patient's hip to replace damaged structures in spinal surgery. The use of an allograft rather than an autograft provides the same basic function however, donor site morbidity and infection rate are decreased with allograft usage. Therefore, in that instance, allograft is used to replace autograft which should be considered by the FDA as homologous use.

Risks For Allograft Bone Products

The AAOS maintains that the use of allograft bone is safe and that no cases of disease transmission have occurred since 1993 when the FDA began regulating human allograft bone.

Statistically, the risk of HIV transmission through bone is approximately 1 in 1.6 million whereas there exists approximately 1 in 450,000 chance of contracting HIV through blood. Bone allografts thereby present a much lower rate of risk for HIV than for blood transmissions.

Effects of processing and sterilization on bone allograft products including freeze-drying, sterilization, gamma and electron beam radiation, may affect biomechanical performance.

Controls to Address Health Risks with the Use of Human Allograft Products

The AAOS believes that the current controls to address health risks are appropriate. FDA and AATB guidelines effectively eliminate approximately 90 % of inappropriate donors.

Current testing of donors includes tests for hepatitis B, C, HIV- 1,2, human T-lymphotropic virus type I, syphilis, gonorrhea, and chlamydia. The AAOS is supportive of testing of donor tissues, quarantines for donor tissue, as well as using FDA licensed methods for blood tests, PCR tests and RNA tests.

Current Industry Standards Available and Future Concerns

- The AAOS supports industry-wide standards for allograft processing.
- We are concerned that the age of the donor may affect the quality of the allograft and structural characteristics additionally, the AAOS questions what effect processing has on the biological activity of the allograft. We support the standardization of bioactivity for allograft bone substitutes.
- The AAOS advocates informed consent for the use of tissue to the donor and donor families.
- We support the practice of cataloguing donor records for ten years in addition to preserving a sample of donor tissue for ten years.
- The AAOS supports the registration of all tissue banks throughout the country. With complete registration compliance, the FDA would have the ability to ascertain trends in allograft banking and communicate urgent information.
- The AAOS is supportive of a requirement of tissue and bone banks to report serious errors and accidents.

The AAOS advocates an alliance between FDA, clinicians, industry, and the AATB to provide a rigorous framework for good tissue practices.

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