

Stem Cells Therapy Clinic Startups – Legal Compliance Issues

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The FDA has the authority to regulate a practice's regenerative medicine products or treatments. Healthcare companies that don't understand and comply with these regulations may receive warning letters. Their products may be seized. The FDA may seek injunctions against the companies. There could even be fines and criminal penalties.

Stem cells are one form of regenerative medicine. Other forms include platelet-rich-protein (PRP) therapy, and gene therapy.

WHY THE FDA WON'T APPROVE YOUR REGENERATIVE MEDICINE PRACTICE

Regenerative medicine includes many treatments and products such as stem cell therapy, PRP, and gene therapy. An experienced stem cell and regenerative medicine lawyer can explain the FDA requirements.

What are stem cells products and therapies?

According to the Mayo Clinic, stem cells are the cells of the human body:

"From which all other cells with specialized functions are generated. Under the right conditions in the body or a laboratory, stem cells divide to form more cells called daughter cells. These daughter cells become either new stem cells or specialized cells (differentiation) with a more specific function, such as blood cells, brain cells, heart muscle cells or bone cells. No other cell in the body has the natural ability to generate new cell types."

Stem cells are useful in understanding how diseases happen. Stem cells can generate healthy cells that replace deceased cells or repair damaged cells (regenerative medicine). Some of the possible beneficiaries of stem cell therapy may include helping people with "spinal cord injuries, type 1 diabetes, Parkinson's disease, amyotrophic lateral sclerosis, Alzheimer's disease, heart disease, stroke, burns, cancer, and osteoarthritis."

Stem cells may be used to test drugs for safety and quality. For example, "nerve cells could be generated to test a new drug for a nerve disease."

Stem cell sources include:

- **Embryonic stem cells.** Embryos that are 3-5 days old and are considered versatile enough to "regenerate or repair diseased tissue and organs."

- **Adult stem cells.** These cells are usually found in bone marrow or fat (or the hip). Adult stem cells have more limited utility than embryonic cells though researchers are discovering evidence that *“adult stem cells may be able to create various types of cells. For instance, bone marrow stem cells may be able to create bone or heart muscle cells.”* Currently, *“adult stem cells are currently being tested in people with neurological or heart disease.”*
- **Adult cells altered to have the properties of embryonic stem cells.** Using genetic programming, *“researchers can reprogram the cells to act similarly to embryonic stem cells.”* Scientists aren’t sure yet about the adverse effects in humans.
- **Perinatal stem cells.** Scientists have also found stem cells in amniotic fluid as well as umbilical cord blood that have the ability to change into specialized cells.

There is some controversy (including moral and ethical concerns) about the use of embryonic stem cells. Stem cell products and therapies generally are injected into a person’s damaged anatomy – with the aim of regenerating a healthy anatomy. There are concerns with all types of regenerative medicine including the concern that cells could mutate which could cause cancer.

The National Institutes of Health created guidelines for human stem cell research in 2009.

FDA oversight of stem cell therapies and regenerative medicine

Stem cell products are treated like biological drugs. Stem cells are regulated through the FDA’s Center for Biologics Evaluation and Research (CBER).

“The Center for Biologics Evaluation and Research (CBER) regulates cellular therapy products, human gene therapy products, and certain devices related to cell and gene therapy. CBER uses both the Public Health Service Act and the Federal Food Drug and Cosmetic Act as enabling statutes for oversight.”

“Cellular therapy products include cellular immunotherapies, cancer vaccines, and other types of both autologous and allogeneic cells for certain therapeutic indications, including hematopoietic stem cells and adult and embryonic stem cells. Human gene therapy seeks to modify or manipulate the expression of a gene or to alter the biological properties of living cells for therapeutic use.”

The National Institutes of Health states that, in 1997, the FDA began a

“Risk-based, tiered approach to regulating cellular and tissue-based products. As a result, human cells, with the exception of those deemed minimally manipulated and used for autologous treatments, would be subject to FDA premarket approval as biologics.”

So far, the FDA has been slow to place products in the *“minimally manipulated category.”*

In addition to FDA regulation, state medical boards and the states themselves can regulate experimental stem cell therapies and do regulate the practice of medicine.

The FDA’s authority to regulate stem cells is derived from Section 361 of the Public Health Service Act (providing authority for the FDA to establish regulations for all HCT/Ps to prevent the introduction, transmission, and spread of communicable diseases) and a series of rules known as the HCT/P regulations. HCT/P stands for human cells, tissues, and cellular and tissue-based products. Manufacturers of stem cell therapies and other products in this category must comply with the HCT/P regulations including registering the stem cell therapy with the FDA’s CBER.

“Manufacture means, but is not limited to, any or all steps in the recovery, processing, storage, labeling, packaging, or

distribution of any human cell or tissue, and the screening or testing of the cell or tissue donor.”

We’ve written about these regulations including discussing such terms as homologous use, autologous use, reproductive use, minimal manipulation, and other terms.

Since stem cell therapies are handled by the FDA as drugs – these therapies are also subject to current Good Manufacturing Practices (cGMPs).

Section 351 of the Public Health Service (PHS) Act defines a biological product as a “*virus, therapeutic serum, toxin, antitoxin, vaccine, blood, blood component or derivative, allergenic product, or analogous product, ... applicable to the prevention, treatment, or cure of a disease or condition of human beings. “Both the FDA’s Center for Drug Evaluation and Research (CDER) and Center for Biologics Evaluation and Research (CBER) have regulatory responsibility for therapeutic biological products, including premarket review and oversight.”*

Again, since stem cell products are intended to treat disease, stem cell products fall within the definition of a biological drug, requiring FDA approval.

California has its own stem cell regulations.

CALIFORNIA STEM CELL REGULATIONS GUIDE THE EMERGING STEM CELL RESEARCH EFFORT AND INDUSTRY

California stem cell laws boost the stem cell industry by funding stem cell research, but the product side of industry is largely in the hands of the FDA.

FDA and stem cell warnings

The FDA has raised concerns about stem cells.

The FDA has expressed concerns that “*stem cells have been called everything from cure-alls to miracle treatments.*” The agency states that stem cell therapies do offer the hope that the therapies can treat diseases or conditions for which few treatments exist. The FDA is expanding its oversight of stem cell products because the products may be illegal, potentially harmful, and offer false promises.

Stem cell therapies – FDA safety concerns

The FDA has numerous safety concerns about unproven stem cell treatments. For example, “*attendees at a 2016 FDA public workshop discussed several cases of severe adverse events. One patient became blind due to an injection of stem cells into the eye. Another patient received a spinal cord injection that caused the growth of a spinal tumor.*”

Some of the safety issues include:

- “*Administration site reactions*
- *The ability of cells to move from placement sites and change into inappropriate cell types or multiply*
- *Failure of cells to work as expected*
- *The growth of tumors*”

The FDA emphasizes that even when stem cell therapies involve your own cells, there are still safety risks. “*In addition, if cells are manipulated after removal, there is a risk of contamination of the cells.*”

STEM CELL LAWS AND REGULATIONS: FDA REGULATION OF STEM CELL THERAPIE

If you wanted to upgrade the old film, “The Graduate,” you’d have Dustin Hoffman’s character shouting out “stem cells!” instead of “plastics!” Of course, he would immediately meet his favorite [...]

FDA approval of stem cell therapies

Generally, stem cell products cannot be approved for market use unless the stem cell products are either approved by the FDA (premarket approval or 510 (k) clearance) or are studied in a clinical investigation that is approved by the FDA. A clinical investigation is called an Investigational New Drug Application (IND). An IND is a “*clinical investigation plan submitted and allowed to proceed by the FDA.*”

The review process also generally investigates how the stem cell therapy will be manufactured so the “*FDA can make sure appropriate steps are being taken to help assure the product’s safety, purity, and strength (potency).*” The FDA also requires *sufficient data from animal studies to help evaluate any potential risks associated with product use.*”

Clinical trials that aren’t conducted pursuant to a formal IND investigation may be subject to FDA warning letters or oversight.

What is an IND?

An Investigational New Drug Application (IND) is a clinical study sponsor request for FDA authorization to “*administer an investigational drug or biological product to humans.*” Unless an exemption applies, the sponsor for a clinical study must obtain FDA authorization for conducting the study by submitting an IND Application. Before a new drug or biological product such as a stem cell therapy treatment can be shipped in interstate commerce, the IND must be filed if the drug/biological product is not “*the subject of an approved New Drug Application or Biologics Product License Application.*”

“*Clinical studies must follow a set of laws and regulations, which are intended to protect the right, safety, and welfare of human subjects participating in human trials, ensure the quality, validity, and integrity of the clinical trial data, and promote the availability of new medical products to the public. These laws and regulations define the roles and responsibilities of entities, such as sponsors, clinical investigators, and institutional review boards. In addition, various guidance documents and standard operating procedures are available to clarify policies and procedures for the IND process.*”

The content and format of an IND submission must be “*complete, well-organized as per 21 CFR 312, and include all applicable FDA Forms.*” These forms can also be found in FDA’s Form Database.

There are specific submission requirements including requirements for electronic submissions for commercial INDs.

The current status of FDA-approved products derived from Stem Cells

FDA’s approval of stem cell products is minimal. The only stem cell-based products that are FDA-approved for use in the United States consist of blood-forming stem cells (hematopoietic progenitor cells) derived from cord blood. One approved stem cell product is Hemacord, a cord blood-derived product manufactured by the New York Blood Center and used for specified indications in patients with disorders affecting the body’s blood-forming system....

Other approved licensed HCT products from the Office of Tissues and Advanced Therapies (OTAT) can be found on the FDA’s website.

PHYSICIAN STEM CELL THERAPIES LEGALLY AMBIGUOUS, WHILE REGENERATIVE CLINICS PROSPER

Recent press calls into question widespread “regenerative” and anti-aging medicine, and physician practices that use stem cell therapies.

Possible FDA actions on for unapproved stem cell products

The FDA may issue warning letters and seek many types of administrative and judicial actions, including criminal enforcement, depending on the violations involved. In August 2017, the FDA announced that the FDA would be increasing its oversight of stem cell therapies and regenerative medicine.

And in March 2017, the FDA published a perspective article in the New England Journal of Medicine in March 2017, to further clarify the benefits and risks of stem cell therapy.

The FDA has also provided Important Patient and Consumer Information About Regenerative Medicine Therapies.

Stem cell therapies usually are reviewed through an Investigational New Drug (IND) process (otherwise a more formal premarket approval process is required). In turn, clinical studies are normally used to obtain IND approval. There are other legal compliance issues including privacy and diversity in clinical studies. Since stem cell therapies often involve cutting-edge technology and research, there are also intellectual property issues including possibly patent issues that need to be addressed.

The developers and users of stem cell therapies should contact Cohen Healthcare Law Group, PC to discuss the FDA and other compliance issues. Our experienced healthcare attorneys advise medical companies and the doctors who prescribe stem cell therapies about healthcare compliance laws and regulations.

Contact our healthcare law and FDA attorneys for legal advice relevant to your healthcare venture.