

| Characteristics | Main types of Stem Cells | Drawbacks of using Embryonic Cells | Advantages and Disadvantages of Adult Stem Cells |
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| 1. Divide by mitosis to produce more cells. 2. Differentiate into different types of specialized cells. | Embryonic Stem Cells: Differentiate into any type of specialized cells Adult Stem Cells: Differentiate into different types of blood cells | 1. Requires ONLY Embryonic cells which has a limited supply and is the only type of stem cell that can differentiate into any type of specialized cell . 2. Is sometimes rejected by the patients immune system and attempts to destroy the cells since it identifies it as "foreign". | Advant ages: Adult stem cells are a great alternative and have the ability of being taken straight from the patient so that they will not cause rejection. Disadv ant-ages: Adult stem cells can only differentiate into different types of blood cells . |
| NOTE: Mitosis is the process in which the nucleus and its contents divide. It contains four stages: Prophase - Metaphase - Anaphase - Telophase. | NOTE: Embryonic stem cells can become ANY type of specialized cell including types of blood cells which is the only types of cells an adult cell can differentiate into. Thus, embryonic stem cells can be used to cure more sicknesses than adult stem cells. | | |
| Risks of Usage In Medicine Risk 1: Virus Transmission Risk 2: Tumor development NOTE: The virus may have already been in the donor stem cell or the cell might have gotten infected in the lab. A tumor may occur since there is a chance that the cells may get out of control once transplanted. | The Ethical Objection The Ethical Objection to using embryonic stem cells resolves around the fact that embryonic stem cells have the potential for human life making some people object their use in research and others to think the benefits of curing existing people who are suffering is more important than the right of embryos . | Why the Immune System Accepts Adult Stem Cells? NOTE: The ability for Adult stem cells to be taken straight from the patient is an advantage because this way the immune system will accept the cells unlike the embryonic cells being considered "foreign". | Information Resource + Video Link The information provided in this cheat sheet is from "Cognito" on YouTube. You can watch it here . |



By kevinhelps
cheatography.com/kevinhelps/

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