

Rodent's Age vs Human's Age

Review Articles

- Yoshiyuki O, Yasuo K. **A translational model to determine rodent's age from human foetal age.** Scientific Reports 2017; 7(17248). (<https://www.nature.com/articles/s41598-017-17571-z>)
- Lloyd A. D. **Aging in mouse and human systems: a comparative study.** Annals of the New York Academy of Sciences 2006. (<https://www.semanticscholar.org/paper/Aging-in-mouse-and-human-systems%3A-a-comparative-Demetrius/824f642c149447c5cd1055feb2688b4fdac3e3b9>)
- Nelson A. A, Elisvania F. S, Marina R. A, Luiz R. L. **Rat's age versus human's age: what is the relationship?** ABCD Arq Bras Cir Dig 2012; 25(1). (http://www.scielo.br/scielo.php?pid=S0102-67202012000100011&script=sci_arttext&tlng=en)
- Sulagna D, Pallav S. **Men and mice: relating their ages.** Life Science 2016; 152. (<https://www.sciencedirect.com/science/article/abs/pii/S0024320515300527>)
- Catherine H. **When are mice considered old?** The Jaxson Laboratory. (<https://www.jax.org/news-and-insights/jax-blog/2017/november/when-are-mice-considered-old.>)



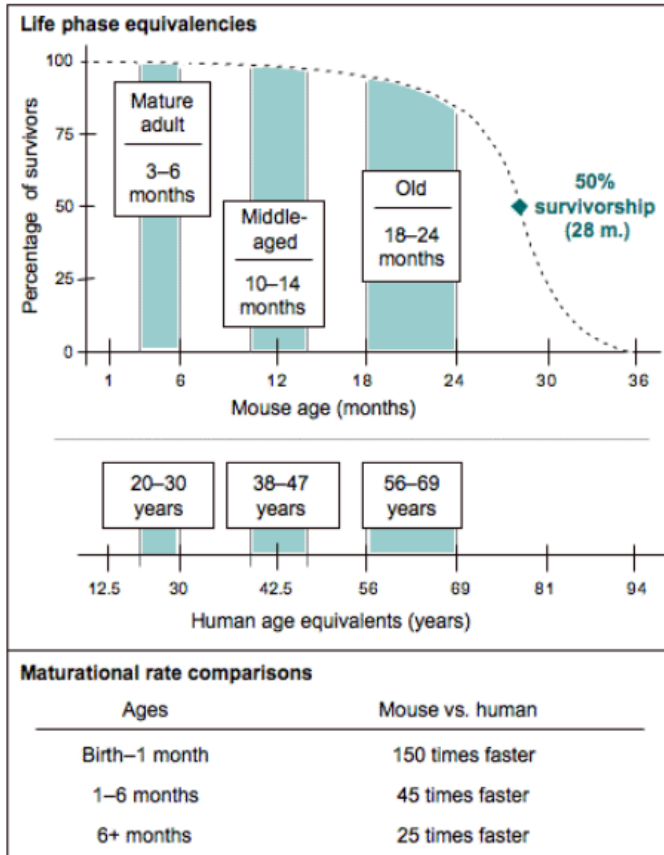
Continuing Education Topic for CMU-ACUC

CMU-ACUC Meeting 08/2562 [2nd July 2019]

Life-history variation in mammals

Demographic property	Mammal's range of variation	Mice	Humans
Age of sexual maturity	9 days – 13 years	12 – 20 weeks 3 – 6 months 0.25 – 0.5 years	13 years
Litter size	1 - 16	4 - 8	1
Reproductive span	1 – 35 years	2 years	35 years

Mice's Age vs Human's Age



Human's Age	Comparison	Mice's Age	
10 – 19 years	Teenage	4 – 12 weeks	< 3 months 0.25 years
20 – 30 years	Mature Adult	12 – 24 weeks	3 – 6 months 0.25 – 0.5 years
38 – 47 years	Middle age	40 – 56 weeks	10 – 14 months 1 years
56 – 69 years	Old	72 – 96 weeks	18 – 24 months 1.5 – 2.0 years

Maturational rate of mice does not linearly correlate with humans.

It occurs 150 times faster during the 1st month of life and 45 times faster next 5 months later. After 6 months of age, the maturational rate is 25 times faster than humans.

Mice should be at least 10 months old for inclusion in a middle age group but upper limit is about 14 - 15 months old.

Mice ranging from 18 – 24 months of age correlate with humans ranging from 56 – 69 years of age. Mice over 24 months of age can be considered “very old” and survivorship drops off markedly.

Exp.; Life history stages in C57BL/6J mice in comparison to human beings

Human's Age vs Rat's Age

Human's Age	Comparison	Rat's Age		
18 years	Teenage	24 weeks	6 months	0.5 years
30 years	Middle age	48 weeks	12 months	1.0 year
45 years		72 weeks	18 months	1.5 years
60 years	Old	96 weeks	24 months	2.0 years
75 years			30 months	
90 years			36 months	
105 years			42 months	
113 years			45 months	
120 years			48 months	

Rats become sexually mature at age = 6 weeks, but reach social maturity several months later (5 – 6 months of age).

* Rats have a brief and accelerated childhood. >>> They develop rapidly during infancy and become sexually mature at about 6 weeks of age.

Total average 16.7 rat days = 1 human year

In adulthood,

Roughly average 1 rat month = 2.5 human years

Roughly average 11.8 rat days = 1 human year

For calculation: Rat's age >> 6 months + another rat months = human's age >> 18 years + (2.5 * another rat months) years