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been fed ad libitum prior to the 48 h fast, there is little effect on fertility. Again, it is critical to understand that the effects on fertility occur prior to any generalized health problems. In my experiments, the most extreme form of caloric restriction will be a 60 h fast that occurs on days 1 and 2 of the estrous cycle. Body weight is recorded and general health condition is monitored daily. In addition to a fasted group, other groups will be fasted and injected (or infused) with metabolic fuels or nutrients to examine their role in maintenance of normal reproductive function. Hamsters in the laboratory tend to become obese as they grow older. In some experiments, obese hamsters will be restricted to 85% of their ad libitum intake for up to one week prior to the start of the experiment to insure that they are not too fat, but still show normal estrous cycles and no signs of poor health.

Analgesics are not appropriate because we are measuring indices of estrous cyclicity which is under control of hypothalamic luteinizing hormone releasing hormone (LHRH), also known as gonadotropin releasing hormone (GnRH). LHRH and LH levels are adversely affected by opiates because it is well-known that opiates and opiate derivatives, including analgesics such as buprenorphine, butorphenol and morphine, affect pituitary hormone secretion and hypothalamic LHRH (GnRH) secretion (2-12).

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