

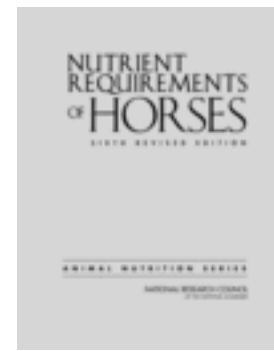
Energy for the Horse

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Unit of Energy = CALORIE

- **calorie (cal)** = heat required to increase the temperature of 1 g water 1°C (from 14.5 to 15.5°)
- **1 kilocalorie (kcal or Cal)** = 1,000 calories
 - Used to express “calories” in human food and horses, gross energy for human foods, digestible energy for horse feedstuffs
- **1 Megacalorie (Mcal)** = 1,000 kcal = 1,000,000 cal
 - Used for horses

Estimation of Digestible Energy (DE) Requirements for Mature Horse (500 kg/1100 lb)



- NRC¹⁹⁸⁹ Nutrient Requirements of Horses - 16.4 Mcal DE for maintenance – one value.
- NRC²⁰⁰⁷ has three digestible energy requirements for maintenance:
 - 1) NRC²⁰⁰⁷ - 15.2 Mcal DE no work, minimum - Horses and ponies in confinement or sedentary lifestyle, also draft breeds
 - 2) NRC²⁰⁰⁷ - 16.7 Mcal DE no work, average - Horses with moderate voluntary activity - 10% over NRC²⁰⁰⁷ no work, minimum
 - 3) NRC²⁰⁰⁷ - 18.2 Mcal DE no work, elevated - Horses with nervous temperaments and high level of voluntary activity - 20% over NRC²⁰⁰⁷ no work, minimum

DE Requirements (Mcal/day)

CLASS OF HORSE	400 kg	500 kg	600 kg
Maintenance <small>no work, minimum</small>	12.1	15.2	18.2
Maintenance <small>no work, average</small>	13.3	16.7	20.0
Maintenance <small>no work, elevated</small>	14.5	18.2	21.8
Light work	16.0	20.0	24.0
Moderate work	18.6	23.3	28.0
Heavy work	21.3	26.6	32.0
Intense work	27.6	34.5	41.4

NRC Requirements Calculator: <http://nrc88.nas.edu/nrh/>

Exercise Categories for NRC²⁰⁰⁷ Digestible Energy Requirements



Exercise Category	Mean Heart Rate	Description	Types of Events
Light	80 bpm	1-3 hr/wk	Recreational and show riding
Medium	90 bpm	3-5 hr/wk	School and show riding, polo, training, breaking
Heavy	110 bpm	4-5 hr/wk	Ranch work, polo, show, race training, upper level dressage, reining
Intense	110-150 bpm	1 hr/wk speed work or 6-12 hr/wk slow work	Racing (all types), 3-day eventing, endurance