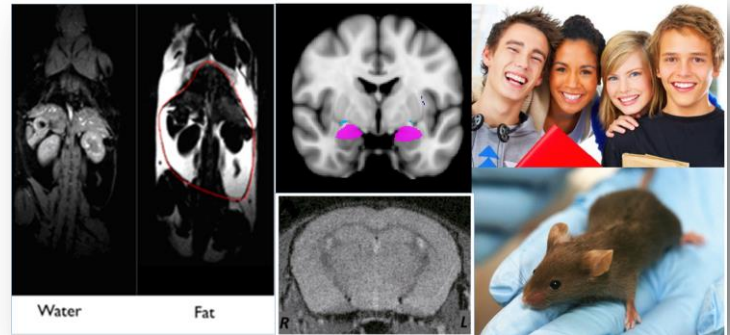# NORC Metabolic Imaging Subcore

The **NORC Metabolic Imaging Subcore** assists NORC Affiliate Investigators (AIs) in harnessing advanced technologies that allow for *in vivo* assessment of metabolic phenotypes and endpoints ir both animal and human models.

OUR SERVICES:

❖ <u>Initial Consultation:</u> **Help** determine your scientific needs and arrange access to Subcore resources and personnel, and assist you in obtaining proper IACUC and Human Subjects approval prior to study initiation.

❖ <u>Protocol Optimization:</u> Tailor your research protocols to the hypothesis being tested and optimize it if you wish to transfer it to another setting or model.

❖ <u>Protocol Implementation:</u> Implement existing or new protocols based on an hourly rate. Protocol implementation services provided by the NORC include:
  - Image acquisition-animal.
  - Image acquisition-human.
  - Image processing.
  - Statistical analysis of imaging data.

❖ <u>Training:</u> Train your own personnel to perform certain imaging procedures

❖ <u>Ongoing Consultation:</u> Subcore personnel will continue to support ongoing protocols during protocol implementation

Note: Scanner time and operation fees are charged independently by the facilities at a <u>reduced rate</u> for NORC AIs.

New service…
Assessment of visceral body fat in humans by iDXA

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EXISTING PROTOCOLS
Metabolic Imaging Subcore personnel have validated several protocols and will support their use by AIs to meet specific research needs:

✓ <u>Fat-water MRI of small animals:</u> MR imaging of mice that provides unique information about the distribution of fat within both fat pads and non-adipose tissues such as liver and muscle.

✓ <u>Mouse brain MRI:</u> a multi-parametric MRI protocol for in vivo imaging of mouse brain, particularly the hypothalamus.

✓ <u>Human brain MRI:</u> Imaging procedures for visualization of the human hypothalamus (Protocol development was done in collaboration with Dr. Ken Maravilla, Director of the MR Imaging Laboratory).

✓ <u>Human functional MRI using visual food cues:</u> The use of functional MRI to demonstrate that visual images of food powerfully stimulate brain areas active in regulating energy homeostasis and reward processing, making it a useful tool for studying brain regulation of appetite in humans.

✓ <u>Human body composition analysis and quantification of intra-abdominal fat:</u> Using DXA, calculation of total body fat, regional fat, non-fat, and mineral content is performed using standard techniques on over 250 subjects per year. In addition, acquisition protocols for MRI and CT-based assessment of body fat depots are also available.