

## Chimpanzee Health Categorization Framework: Harmonized Across NIH-supported Facilities

Categorizations should be used to better understand the animal's needs in its current and future environments and should inform any relocation decisions (i.e., transfer process, quarantine and resocialization of animals).

2/6/2019

Health Category	Description of Chimpanzee
I	<p>Animals that are normal and healthy;</p> <ul style="list-style-type: none"> <li>• have no underlying disease or behavioral concerns;</li> <li>• have no specialized behavioral intervention management requirement; and</li> <li>• are at minimal risk of one or more relocation-related adverse events.</li> <li>• Minimal anesthetic risk.</li> </ul>
II	<p>Animals with minor disease and slight-to-mild systemic physical health or behavioral disturbance for which the animals can compensate;</p> <ul style="list-style-type: none"> <li>• minimal to no specialized behavioral intervention management is required;</li> <li>• class includes geriatric and obese chimpanzees;</li> <li>• at slight risk of one or more relocation-related adverse events;</li> <li>• slight anesthetic risk.</li> </ul>
III	<p>Animals with obvious disease, moderate systemic disease or disturbances, and mild clinical signs that are medically controlled; class includes animals with:</p> <ul style="list-style-type: none"> <li>• mild cardiac disease as determined by cardiac evaluation defined below (recommend these animals have, as needed, additional complete cardiovascular examinations as defined below),</li> <li>• mild osteoarthritis,</li> <li>• controlled non-insulin dependent diabetes (as defined below),</li> <li>• pre-diabetes (as defined below), or</li> <li>• moderate documented behavioral issues where behavioral oversight and guidance is needed to evaluate possible progression of behavioral concern; yet has a history of successful social group integration;</li> <li>• at moderate risk of one or more relocation-related adverse events;</li> <li>• moderate anesthetic risk.</li> </ul>
IV	<p>Animals that are significantly compromised by disease, have preexisting systemic disease or severe disturbances, examples include but not limited to:</p> <ul style="list-style-type: none"> <li>• chronic or recurring conditions with high risk of transmission to other chimpanzees (e.g., frequent recurrent herpes viral outbreaks);</li> <li>• moderate to severe or uncompensated heart disease as determined by cardiac evaluation defined below [strongly recommend these animals have additional complete cardiovascular examinations as defined below];</li> <li>• insulin-dependent diabetes (as defined below);</li> <li>• chronic or moderate to severe pulmonary disease;</li> </ul>

	<ul style="list-style-type: none"> <li>• moderate osteoarthritis.</li> <li>• Also included are animals that have documented behaviors, which could cause severe harm to the animals themselves or to other animals, and may restrict their integration into social groups, or which requires increased behavioral oversight and guidance to follow progression of the concern and escalation of severity;</li> <li>• at high risk of one or more relocation-related adverse events;</li> <li>• high anesthetic risk.</li> </ul>
<b>V</b>	<p>Animals with life-threatening, systemic disease that poses a constant threat and could result in abrupt death, examples include:</p> <ul style="list-style-type: none"> <li>• advanced cardiovascular disease as determined by cardiac evaluation defined below [strongly recommend these animals have additional complete cardiovascular examinations as defined below];</li> <li>• advanced or progressive kidney, liver, or endocrine disease;</li> <li>• profound shock;</li> <li>• severe trauma;</li> <li>• pulmonary embolus;</li> <li>• uncontrolled diabetes [as defined below];</li> <li>• severe osteoarthritis or terminal malignancy.</li> <li>• Also included are animals with extremely severe documented behavioral issues that have previously resulted in serious harm to self or others;</li> <li>• at extremely high risk of one or more relocation-related adverse events;</li> <li>• animals assigned to a Quality of Life (QOL) Plan for health or behavioral issues; severity of behavioral concerns may make it extremely difficult to maintain QOL, which includes criteria for humane endpoints and consideration for euthanasia;</li> <li>• extremely high anesthetic risk.</li> </ul>

**Frequency of Assessment and Re-classification:** Animals should be evaluated at least annually but more frequently as needed when clinical symptoms dictate further follow-up to determine their health classification. The animal’s history and clinical signs will dictate the medical procedures and tests required for diagnosis and re-classification. Determination of further medical and/or behavioral assessments will be determined by the veterinarian and behaviorist, who evaluate the animal. For animals with multiple conditions, the most severe disease state(s) drives the classification; however, multiple conditions itself is indicative of a more severe health classification.

**Definitions:**

**Cardiac Evaluation:** At annual physical exam or if clinical signs such as exercise intolerance, respiratory issues, or lethargy are noted, a series of exams maybe initiated outside of the regular scheduled annual physical examination. A cardiac evaluation may include: radiographs (2 views), auscultation of the heart to evaluate murmurs, systemic blood pressure (minimum of 3 readings), and electrocardiogram (ECG) tracing(s) to evaluate cardiac rhythm and conduction.

If possible, a brief 2 view (2 and 4 chamber) echocardiogram may be performed to initially evaluate ventricular size. A Complete Blood Count (CBC) and blood chemistry are standard for all physical examinations and if warranted, cardiac biomarkers such as B-type Natriuretic Peptide (BNP) maybe ordered. If any cardiovascular abnormalities are noted by the clinical veterinarians, then a complete cardiovascular examination may be scheduled.

**Complete Cardiovascular Examination:** Performed by a board-certified veterinary cardiologist. This evaluation may include systemic blood pressure measurements, a 3-minute ECG, and an echocardiogram. The echocardiogram may include an ECG tracing for timing purposes and sedation with alpha 2 adrenergic agonists should be avoided. The echocardiogram may include a complete cardiovascular assessment of chamber size and function, valvular anatomy and patency, etc. with 2D and Doppler echocardiographic imaging. Ejection fraction and/or shortening fraction may also be calculated. The presence of arrhythmias (on ECG), such as ventricular premature complexes, ventricular tachycardia, and/or atrial fibrillation suggest significant underlying heart disease whether there is evidence of structural heart disease on the echocardiogram or not.

#### **Diabetes Categories:**

- **Controlled Non-Insulin Dependent Diabetes:** Animal diagnosed with diabetes, currently well controlled on oral medications.
- **Insulin-Dependent Diabetes:** Animal requires injectable insulin treatment to treat diagnosed diabetes and regular blood glucose monitoring.
- **Pre-Diabetes:** Animal exhibiting symptoms of pre-diabetes (elevated blood glucose, obesity) that requires frequent blood glucose monitoring and/or management with oral medications, diet modifications, and increased positive-reinforcement training.
- **Uncontrolled Diabetes:** Animal diagnosed with diabetes that requires frequent blood glucose monitoring and is not well controlled on oral medications or insulin.

**Geriatric:** at least 35 years of age

**Physical Examination:** Each facility has a standard operating procedure (SOP) describing an annual physical examination of a chimpanzee including recommended medical tests and evaluation criteria.

**Quality of Life (QOL) Plans:** Each facility has defined QOL Plans based on health and medical considerations as well as behavioral concerns. The QOL Plans include criteria for humane endpoints and consideration of euthanasia.