**Ensuring your newborn calves get the right start in life is essential to their health and future performance. University of Guelph researchers have developed a new scoring system to assess birth trauma to improve calf health. The birthing process can be difficult on calves. A newborn calf can suffer from pain, injury, inflammation, rib fracture and impaired body temperature regulation from a stressful or difficult birth. Even though difficult births are common in the dairy industry, only basic evaluation tools exist to assess these newborn calves.**

Dr. Christine Murray, professor emeritus Ken Leslie, and other university faculty in the department of population medicine, have developed an on-farm scoring system for newborn calves called VIGOR. The acronym stands for Visual appearance, Initiation of movement, General responsiveness, Oxygenation and Rates, such as heart and respiratory. All these traits can be measured on the farm, says Murray.

“Using a practical on-farm tool to assess birth trauma and newborn well-being can help producers identify which calves need extra help following birth and minimize future health risks,” she says.

The researchers based VIGOR on the human APGAR test system, a mandatory procedure used by medical professionals to assess a newborn baby’s health status within the first two minutes of life. The VIGOR scoring system, like APGAR, will help producers assess a newborn calf’s health and determine what steps need to be taken to improve the calf’s condition.

The VIGOR system lets you assess several physiological and behavioural signs, such as how soon a calf stands up, its suckling reflex and heart rate. Visual signs, such as the colour of the calf’s mucous membrane, are also scored. A bright pink mucous membrane is considered normal, while blue indicates a lack of oxygen. Another visual assessment is meconium staining. This occurs when a calf defecates due to stress while still in the amniotic sack.

Scoring a calf immediately following birth can help producers accurately detect birth trauma of the calf and predict long-term health and performance, says Murray.

“Although a calf often becomes more vigorous as time passes, the initial detrimental effects of a stressful birth still represent underlying and ongoing problems,” says Murray.

Researchers also want to improve the health of calves receiving low scores. They found the anti-inflammatory drug meloxicam improved a calf’s overall health, suckling reflex, milk intake and health throughout pre-weaning. The researchers are also examining how sodium bicarbonate can treat acidosis, a symptom associated with a prolonged or difficult birth. Acidosis occurs when a calf’s oxygen levels decrease and acidity in its body increases. Researchers have found sodium bicarbonate can be easily integrated into colostrum at first feeding and may offer a cost-effective treatment for acidosis.

Murray and her team want to determine cut-off points for the VIGOR score. A score higher than a certain cut-off point would prompt a producer to apply treatments to improve a calf’s health status. These may include administering meloxicam for pain and inflammation, giving sodium bicarbonate for acidosis, or following other standard practices, such as ensuring a newborn calf receives adequate amounts of high-quality colostrum shortly after birth.

“This research is the first of its kind to be conducted on calves,” says Leslie. “Our vision is to turn the VIGOR scoring system into an accepted and standardized test for dairy producers.”

Alaina Osborne is a student writer for the University of Guelph’s office of research. Supervisors for this research include professors Todd Duffield, Derek Haley, David Pearl, as well as Dr. Doug Veirse, Agriculture and Agri-Food Canada and Kathleen Shore, New Life Mills. This research is supported by the Agricultural Adaptation Council through the Ontario Veal Association, Boehringer Ingelheim Canada and Dairy Farmers of Ontario.