## A new colony of *mdx* dystrophic mice with genetically identical littermate controls

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The *mdx* mouse and boys with Duchenne Muscular Dystrophy (DMD) both lack a functional copy of the protein dystrophin and the absence of dystrophin is the primary cause of the pathophysiology seen in DMD. The dystrophinopathies arise as a result of a mutation of a single "dystrophin" gene on the X chromosome. The *mdx* mouse is the most commonly used animal model of DMD, in part because it is a convenient and economical model and also because the original mouse homozygous/hemizygous cross in this X-linked condition meant that all the off spring were homo- or hemi- zygous for the *mdx* mutation. The *mdx* mouse was identified as a spontaneous mutation in 1984. Since then all studies involving *mdx* mice have used mice from a separate wild type colony as controls ( C57B1/10 ScSn or similar). This leaves studies on the *mdx* mouse open to the criticism that after 20 years of separate breeding that the controls and *mdx* mice may have a different genetic background and that any reported difference could be the result of a genetic mutation other than the one on the dystrophin gene. As a result of this criticism of the controls used in *mdx* work at least one major journal will not accept *mdx* studies unless littermate controls are used. In order to solve this problem we have generated a new line of *mdx* mice (N1F1 *mdx* mice). Male C57BL/10ScSn-Dmd (*mdx*) were bred with female C57BL/10ScSn mice, the offspring produced were mated together to produce the following offspring: 50% females homozygous (*mdx*/*mdx*); 50% females heterozygous (*mdx*/+); 50% males hemizygous (*mdx*/Y) and 50% males wild type (+/Y). In this study we show that the litter mates can be conveniently phenotyped by one or more of the following methods, serum creatine kinase measurements, skeletal muscle histology and/or western blots for dystrophin using a polyclonal dystrophin antibody. All animals were killed with Halothane prior to removing tissue. N1F1 mice are a cheap and convenient method of generating male *mdx* mice with male litter mate controls on a genetically identical background.