# An intrinsic distinction in neuromuscular junction assembly and maintenance in different skeletal muscles



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We analyzed the formation of neuromuscular junctions (NMJs) in individual muscles of the mouse embryo. Skeletal muscles can be assigned to one of two distinct classes of muscles, termed "Fast Synapsing" (FaSyn) and "Delayed Synapsing" (DeSyn) muscles, which differ significantly with respect to the initial focal clustering of postsynaptic AChRs, the timing of presynaptic maturation, and the maintenance of NMJs in young adult mice. Differences between classes were intrinsic to the muscles and manifested in the absence of innervation or agrin. Paralysis or denervation of young adult muscles resulted in disassembly of AChR clusters on DeSyn muscles, whereas those on FaSyn muscles were preserved. Our results show that postsynaptic differentiation processes intrinsic to FaSyn and DeSyn muscles influence the formation of NMJs during development and their maintenance in the adult.

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