When does muscle grow (hypertrophy) from resistance exercise?

SUMMARY: Research has shown that that the muscle hypertrophy (growth) that occurs at initial stages of training (~4 sessions) is mostly attributable to muscle damage induced cell swelling with the majority of strength gains resulting from neural adaptations (2-4 weeks). So the feeling that your muscles are bigger when you start is not from muscle growth, it is from swelling. Early strength gains is not because of the addition of muscle it is a neural adaptation. With continuous and strategic training, however, the body continues to adapt and the development of new muscle tissue occurs. Within the latter phase of training (6−10 weeks) muscle growth (addition of protein in the muscle cells) begins to become the dominant factor. This is when mass or muscle hypertrophy is observed. Individual genetics still determines how responsive muscle tissue will be to resistance training. With that said, the average time to see this adaptation ranges anywhere from three to six months of training and muscle growth slows down within that year.

When does muscle grow from resistance exercise?

Research has shown that that the muscle hypertrophy (growth) that occurs at initial stages of training (~4 sessions) is mostly attributable to muscle damage induced cell swelling with the majority of strength gains resulting from neural adaptations (8−12 sessions). Within the latter phase of training (6−10 weeks) muscle growth (addition of protein in the muscle cells) begins to become the dominant factor. According to a study muscle growth starts after four weeks of consistent weight training. However, muscle growth early on is small and hardly noticeable to the naked eye. The researchers were only able to see the increased muscle growth thanks to ultrasound. During the initial phase of a strength-training program noticeable strength gains are made because of something called neural adaptability, which is an increase in the recruitment of motor units and not from hypertrophy to a great degree. As the nervous system becomes more efficient and recruiting more motor units, more force is produced. These initial adaptations are often falsely interpreted as muscle size increases. According to another study you'll likely see the biggest strength gains from improved neuromuscular activation occur within two months of starting a consistent workout routine. With continuous and strategic training, however, the body continues to adapt and the development of new muscle tissue increases. This is when mass or muscle hypertrophy is observed. Individual genetics still determines how responsive muscle tissue will be to resistance training. With that said, the average time to see this adaptation ranges anywhere from three to six months of training and it slows down within that year.