

Down Syndrome

What is Down Syndrome?

Down syndrome (Trisomy 21) is a genetic condition caused by an extra full or partial copy of chromosome 21. It typically results in varying degrees of intellectual and developmental delays, mild-to-moderate cognitive impairment, characteristic physical features, and a higher likelihood of certain medical conditions. It is one of the most common chromosomal conditions, occurring in approximately 1 in every 1,158 births in Australia.

Understanding the Basics Causes:

Typically, a human baby receives 23 chromosomes from each parent for a total of 46. In Down syndrome, a random error in cell division results in an extra 21st chromosome.

Types:

- **Trisomy 21:** The most common type (about 95% of cases), where the extra chromosome is present in every cell.
- **Mosaic:** A rare type where only some cells have the extra chromosome.
- **Translocation:** The extra chromosome 21 attaches to another chromosome.

Physical Features & Health Complications

While not everyone will have all features, common physical traits include:

- Low muscle tone (floppy baby syndrome)
- A flatter facial profile with upward-slanting eyes and small ears
- A single crease across the palm of the hand
- Smaller overall stature

People with Down syndrome may also face associated health issues, though these can often be managed with medical care and regular screenings:

- Congenital heart defects
- Thyroid conditions
- Hearing and vision problems
- Digestive issues

Benefits from working with RDA

- **Low Muscle Tone;** Muscles are strengthened by the increased use involved in riding. Exercise improves respiration and circulation.

- **Intellectual Disability;** Shapes, colours, counting, sequencing, pattern recognition and problem solving are taught through games and activities on horseback.
- **Hearing & Vision Impairment;** Improved visual spatial perception including directionality (knowing left from right), space perception (knowing when items are close in shape but different)
- **Poor Fitness;** Trotting and cantering increase both respiration and circulation
- **Difficulty with Fine Motor Coordination;** Riding a horse requires a great deal of coordination in order to get the desired response from the horse. Since the horse provides instant feedback to every action from the rider, it is easy for the rider to know when they have given a correct cue. Repetition of patterned movements required in controlling a horse quickens reflexes and aids in motor planning.
- **Concentration;** Programs include educational concepts, learning numbers, colours, shapes, patterns and sequencing. Memory and concentration can be improved through playing games.
- **Social Isolation;** Group lessons provide riders with the opportunity to join in with their peers and understand concepts of teamwork and participation in social rituals such as appropriate greetings and thanking volunteers