



# Is your child ready to dive?

BY DR ISABEL READER

Is your child interested in scuba diving and you are at a loss for whether they are prepared? Then read on to find out all the issues which need consideration and whether your child is ready to dive.

**S**cuba diving is an increasingly popular adventure sport. Often, entire families become involved so that, sooner or later, parents ponder the present age restrictions for scuba certification and wonder about the potential safety issues associated with diving at a young age. Frequently, one parent is enthusiastic about the prospect while the other is not and assurances are required. Sometimes, schools are also approached about their willingness to support introductory scuba training on their premises; if they agree, they need to understand the potential risks and be able to inform parents about the implications of their children participating.

So with that background, this article is focused primarily on parents. The objective is to offer factual evidence surrounding the safety of scuba diving for children.

Although training agencies and diving schools do impose age restrictions for diver certification training courses and diving operators typically deny air fills to divers who are not certified, there is no actual legal restriction that prohibits children from diving. So, the decision ultimately lies with the parents and whoever teaches them to dive, whether officially or unofficially.

## WHAT DO THE DIVER TRAINING AGENCIES HAVE TO SAY?

The Professional Association of Diving Instructors (PADI) offers full diver certification from the age of 15 years. The PADI Bubblemaker Programme is open for children of ages eight and up, although it is limited to 2 m. The PADI Seal Team Programme is also open for children



of ages eight and up and adds photography and other underwater activities to the mix. From 10 to 14 years of age, PADI offers Junior Open Water Diver training that is a full Open Water Diver scuba certification course with certain age-related limitations on open water scuba diving: From 10 to 11 years of age, children must dive with a PADI professional or a certified parent or guardian when diving to a depth of no more than 12 m. From 12 to 14 years of age, they must dive with a certified adult (with special training) and they are permitted to dive up to 21 m. From 13 years of age they can take the Open Water Diver course online. They can also do the Junior Rescue and Master Diver training with the restriction of diving with an adult buddy.

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The National Association of Underwater Instructors (NAUI) states on its website that they have reviewed the reasons that 12 was established as a minimum age and found that there is no reliable data or information by which to consider lowering it at this time.

The Recreational Scuba Training Council (RSTC) in the United States of America has set the minimum age at 15 for the certification of sport divers.

The South Pacific Underwater Medicine Society committee recommends a minimum age of 16 for certification. However, the Australian Standards authority reduced this to 14 years of age to comply with diver training agencies. Their requirement states that the child should be “at least 14 years of age, but persons younger than this may in some cases be eligible to train for conditional certification which allows the young person to dive with a certified diver with the consent of parents or guardians.”

The point of the matter is that diver training is now available to children from age eight. So, it is necessary for parents to decide whether their eight-year old child should dive or not?

### SO, HOW OLD IS OLD ENOUGH?

In many respects, age is actually used as a surrogate for a required measure of physical strength and emotional and intellectual maturity. As such, some children may be strong and mature at a very young age, whereas others may remain at risk even at an age that they can be fully certified. Therefore, when viewing the age restrictions, these underlying issues must be considered:

- Is the psychological development of the child adequate for the purpose of training and compliance with the rules of safe diving?
- Is the child physically “big” and strong enough to wear and use the required scuba equipment without difficulty or being at risk of suffering injuries?

In September 2001, an article appeared in *Undercurrent* by Doc Vikingo titled “The mind and bodies of children – are they really suited to scuba?” He delineated the three developmental stages of child development according to Jean Piaget:

- Firstly, the “pre-operational phase,” beginning at ages two to seven, is where a child’s perceptions still dominate his or her judgement. They tend to focus attention on one aspect of an object while ignoring others. They are unable to understand the principles underlying proper behaviour and rely on dos and do nots imposed by authority. Some children aged eight years and even older can be delayed in this phase and this may only be detectable with proper screening.
- The second phase is the “concrete operational phase” at approximately seven to 11 years of age. Here logical thought starts to develop, but it remains dependent upon concrete references. The child develops the ability to appreciate mass, volume and length and to arrange objects in a logical sequence. However, it remains linked to objects present rather than objects in abstract.
- Then follows the third and final “formal operational phase” at ages 11 to 15. Here, thoughts gradually become less tied to concrete reality and become more abstract.



This allows them to think about what might be, rather than just what is. This level equates more to the thinking pattern needed for safe scuba diving as the child is able to envisage and appreciate risk.

According to Vikingo, the new policy of PADI, Scuba Schools International (SSI) and other agencies clearly allows entry to children who are still in the “concrete operational stage”. His concern is that, although the child might be able to understand Boyle’s law and solve a few mathematical problems, they may still fail to appreciate how this applies to them in an out-of-air situation and to understand the implications of a breath-holding ascent. Even more worrisome is the situation of an emergency, such as with a stuck buoyancy compensator (BC) power inflator mechanism. In these situations, a child of this age is unlikely to generate multiple solutions and to choose the best alternative. Children at this age are also very impulsive and do not appreciate their physical restrictions, thus leading to risk-taking behaviour.

Simply applying depth restrictions to children does not guarantee safety. The most devastating diving accidents with arterial gas embolism and death often occur in less than 5 m. Panic is one of the leading factors in serious diving accidents and children are more susceptible to it. The absence of mature reasoning and psychological maturity undermines self-soothing strategies in stressful situations.

## WHAT ABOUT THE PHYSICAL CONSIDERATIONS?

In terms of the physical considerations regarding children and diving, the following summary is offered by Carl Edmonds in his textbook *Diving and Subaquatic Medicine*:

- The Eustachian tubes in children are narrower and smaller, leading to an increased risk of middle-ear infection.
  - Children’s upper and lower respiratory tract passages are narrower by comparison to the air cavities associated with them and this predisposes them to pulmonary barotrauma when compared to adults.
  - Asthma is more likely in childhood than in early adolescence when the airways grow relative to the lung volume.
  - The risk of barotrauma, causing more damage to developing organs than fully-developed organs, is of further concern. Injuries do not only affect the existing structures, but may also significantly alter their future growth and maturation.
  - A patent foramen ovale, which is a small opening between the right and left upper chambers of the heart, is more common in children than in adults. As such, dives leading to significant venous bubble formation might predispose children to a greater risk of neurological decompression illness.
  - Due to a relatively large skin- to body-mass ratio, children do not regulate their body temperature as well as adults do, which makes them susceptible to hypothermia.
  - Children’s bones are still growing. As such, damage to growth plates might lead to stunted growth. Nitrogen bubbles in the small vessels that supply these growth plates might lead to the damage of these critical tissues.
- Equipment for scuba diving is relatively complex and therefore may present various challenges to smaller children. Heavy gear; adult-sized equipment; designs presuming adult hand-grip sizes and strength and poorly fitting BCs



and wetsuits all have the potential of causing discomfort, dysfunction and distress in children. Uncomfortable equipment will also cause excessive strain and energy expenditure so that the child is likely to tire quickly and may even be at a greater risk of developing decompression sickness (DCS) on deeper dives.

## The Eustachian tubes in children are narrower and smaller, leading to an increased risk of middle-ear infection.

Children are known for their rapid growth and this may prompt parents to buy slightly oversized equipment that children are meant to “grow into”. However, these may initially not function optimally as fins may get lost, loose wetsuits may be ineffective in preserving heat and bundled equipment may lead to entanglement. Conversely, the need for regular equipment size upgrades (which may be delayed for financial reasons) can lead to breathing restrictions or cramps.

### FINAL CONSIDERATION

So, after considering all these things, how do you as a parent decide whether your child is ready to learn to dive (even if their age allows them to be trained)?

This is the toughest question. PADI suggests that the following questions may assist in determining if a child is ready to dive:

- Does the child want to learn to dive? The child should not be pressured to dive by their parents or friends.
- Is the child medically fit? If the child has a medical condition (for example ear problems or asthma), diving may jeopardise their health and enjoyment significantly.
- Is the child comfortable with water and can the child swim? If the child does not have adequate watermanship, scuba diving may be very stressful and loss or failure of equipment may precipitate a near drowning situation.

- Does the child have a sufficient attention span to learn from class discussions, pool and open water briefings and other interactions with instructors? Young children or those with attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD) may not be able to retain information, whereas using psycho-stimulant medication while diving may cause other difficulties.
- Are the child's reading skills sufficient to learn from adult material? The child must be able to understand and accept the inherent risks related to diving and be able to master the necessary knowledge and skills to mitigate them.
- Can the child feel comfortable telling an unfamiliar adult about any discomfort or when not understanding something? The child must be able to admit a problem or express fear of getting into situations they are not ready to cope with so that they may opt out of a dive without being shamed or ridiculed.

### WHAT DOES DAN-SA SAY?

Deciding whether or not to allow your child to dive is a difficult decision. There is no one-size-fits-all answer.

For those who remain uncertain, snorkelling may offer a useful bridge for the child to learn many of the skills they will need for scuba diving. It takes a lot of the pressure off of the parents and children and keeps everyone moving forward. Children hone their swimming and finning skills, learn to respect and love the ocean and develop observation skills and an interest in marine life that, in time, they can transfer upon becoming scuba divers.

DAN-SA's conclusion is that each child should be individually evaluated in terms of their emotional and psychological development. They should preferably be cleared for diving by a diving medical practitioner who is familiar with all the issues listed here. This is necessary to rule out any illnesses or physical reasons why they should not scuba dive. We also recommend that only reputable institutions be used to train your children, preferably diving schools who have extensive experience in assessing and training children.

Do not take scuba diving lightly. It is much more than a quick dip in the ocean to show your children the sea creatures. Always put safety first. **AD**