

Summary of evidence
It is advised to combine any fertility preservation intervention with other medically indicated procedures to minimise additional anesthetic risks and costs.
Ovarian tissue cryopreservation can be used for fertility preservation in pre- and postpubertal girls.
Cryopreservation of immature testicular tissue, containing spermatogonial stem cells, as a fertility preservation option for this population is still experimental and should be well explained to caregivers and patients by a multidisciplinary team.

Recommendations	Strength rating
Inform patients and caregivers about the impact of gonadotoxic treatments on future fertility and about fertility preservation options and their risk-benefit balance.	Strong
Discuss the indications and options for fertility preservation in a paediatric multidisciplinary fertility preservation team and consider the toxicity of the planned therapy, the age and pubertal status as well ethical and financial issues.	Strong

3.5 Hydrocele

3.5.1 Epidemiology, aetiology and pathophysiology

Hydrocele is defined as a collection of fluid between the parietal and visceral layers of the tunica vaginalis [238]. In males congenital hydrocele is based on failed obliteration of the processus vaginalis between the inguinal canal and scrotum. Similarly, although more rare, in females hydrocele can occur with failed obliteration of the canal of Nuck, a protrusion of peritoneum in the female inguinal canal. There are various types of congenital hydrocele. In communicating hydrocele intraperitoneal fluid passes into the scrotal tunica vaginalis due to persisting patency of the processus vaginalis (PPV). This must be differentiated from inguinal hernia in which the processus vaginalis is wide enough to allow passage of abdominal viscera or omentum [238]. If obliteration of the processus vaginalis occurs with focal patency of the mid-portion, a hydrocele of the cord occurs. The exact time of spontaneous closure of the inguinal processus vaginalis is not known. Processus vaginalis is present in approximately 80-94% of newborns and in 20% of adults [239]. Scrotal hydroceles without associated patency of the inguinal processus vaginalis may be encountered in newborns [240]. However, such non-communicating hydroceles, are often acquired and based on an imbalance between the secretion and re-absorption of lymphatic fluid, and thus can be found secondary to minor trauma, testicular torsion, epididymitis, varicocele operation (due to ligation of the lymphatics) or may appear as a recurrence after hydrocele repair. Rarely a hydrocele may have an intra-abdominal component, positioned ventral or dorsal to the bladder, the so-called abdominoscrotal hydrocele (ASH). This is considered to be a scrotal hydrocele with an hourglass-shaped extension reaching into the abdomen via the inguinal ring. Abdominoscrotal hydrocele may be associated with testicular dysmorphism related to increased pressure [241, 242].

3.5.2 Diagnostic evaluation

The classic description of a communicating hydrocele is that of a hydrocele that fluctuates in size, and is usually related to ambulation. It may be diagnosed by history-taking and physical investigation. The presence of contralateral disease should be addressed during the initial consultation [239]. Transillumination of the scrotum provides the diagnosis in the majority of cases, keeping in mind that fluid filled intestine and some prepubertal tumours may transilluminate as well [243, 244]. In hydroceles the swelling is smooth and usually not tender. If there are any doubts about the character of an intrascrotal mass or if the testis is not palpable, scrotal US should be considered, which has nearly 100% sensitivity in detecting intrascrotal lesions. Doppler US studies help to distinguish hydroceles from varicocele and testicular torsion, although these conditions may also be accompanied by a hydrocele [245]. Presence of ASH is suggested by a tense hydrocele or palpable abdominal extension upon compression of the scrotal part of the hydrocele, and can be confirmed by US [242].

3.5.3 Management

Conservative management

In the majority of infants, observation is warranted at least within the first twelve months because of the tendency of spontaneous resolution [246]. The rate of resolution decreases with age, with 92% resolution below one year old and 43% above three years [247, 248]. Initial observation poses little risk as progression to hernia is rare and does not result in incarceration [246]. There is no evidence that hydrocele risks testicular damage [248]. In acquired hydrocele, suggestive of a non-communicating hydrocele, there is still a reasonable chance