

Let's Talk About...

Inhaled Corticosteroids (ICS)

Inhaled corticosteroids (core-tick-oh-steroids), also called ICS, are medicines used to control and prevent asthma symptoms. Inhaled ICS are different than the “anabolic” steroids that body builders use.

Airways are the tubes inside the body the air moves through when you breathe in and out. These airways can get swollen inside which makes it hard for air to move through them. Swelling inside the airways causes the majority of the symptoms of asthma. Inhaling ICS medicine can decrease the swelling, but this medicine does not relieve an asthma attack. ICS can prevent asthma symptoms if used as your doctor orders. That is why these medicines are called “controllers” or “preventers.” If your child has an asthma attack, he should use quick-relief medicine such as albuterol.

Why does my child need Inhaled Corticosteroids?

ICS is the best medicine for children with moderate to severe asthma. Also, some children with mild asthma may benefit from ICS.

Many studies show that ICS medicine is the best way to control long-lasting asthma. ICS may prevent lung damage from untreated asthma. Children with asthma who use ICS have a better quality of life, less symptoms, better school attendance, and less need for long hospital stays. They also have less need for corticosteroid pills (like prednisone).

Inhaled corticosteroids start to decrease airway swelling 24 hours after they are taken. However, you may not notice a change in your child's asthma for 1 to 2 weeks. Once your child's asthma is under control, they should continue to use ICS every day even if there are no asthma symptoms. ICS must be used every day to work well.

Your child may be given a plastic tube called a spacer to use with the inhaler. They should take the prescribed number of puffs of the inhaled steroid through the spacer. Some dry-powder inhalers should not be used

with a spacer. Ask your doctor if you are unsure about using a spacer.

What are the side effects of ICS?

ICS may cause your child's voice to become hoarse, bother their throat, or cause them to cough. ICS may also cause an infection in your child's mouth or throat. This infection looks like small white patches that may be sore. If you notice this infection, call your doctor. You can lessen these side effects by always using a spacer and having your child rinse their mouth with water after each use of the ICS.

The label on all ICS medicines says that it may cause a child to grow slower. However, this is not true for all patients and happens rarely in children who use a low to medium dose of the medicine. Children who use ICS may have catch-up growth later on, even if they grow slower now. Your doctor should follow your child's height on a growth chart to make sure that she grows normally. Your doctor is aware of the possible side effects from ICS, but your child's asthma is a good reason to use this very important medicine. If long-lasting asthma is not treated the side effects may be worse than the side effects of this medication. Untreated asthma can slow a child's growth, cause lung damage, and make daily living very difficult.

Once your child's asthma is controlled, your doctor will make sure the dose of ICS is the smallest dose that they need.

Will my child always have to use ICS?

Many children with asthma may need to continue using ICS as they get older. Some children do not. Your doctor may prescribe a controller medicine that is not a steroid, especially if your child's asthma gets milder. Some children only need ICS during certain seasons (like the winter cold and flu season or the spring pollen season). Ask your doctor about these options.

Calcium and vitamin D

If your child takes corticosteroids longer than one to two weeks, it may affect his bone development. Corticosteroids may cause a calcium and vitamin D deficiency. The right amount of calcium and vitamin D in his diet will help keep your child's bones growing properly. Please see the chart below for recommended daily allowance (RDA) for calcium and vitamin D.

Calcium and Vitamin D dietary reference intakes by life stage

Calcium		Vitamin D			
Life-stage group (age and gender)	RDA (mg/d) (intake that covers needs of ≥97.5% of population)	UL (mg/d) ^a	RDA (IU/d) (intake that covers needs of ≥97.5% of population)	Serum 25OHD level (ng/ml) (corresponding to the RDA) ^b	UL (IU/d) ^a
1–3 yr (M+F)	700	2500	600	20	2500
4–8 yr (M+F)	1000	2500	600	20	3000
9–13 yr (M+F)	1300	3000	600	20	4000
14–18 yr (M+F)	1300	300	600	20	4000
19–30 yr (M+F)	1000	2500	600	20	4000
31–50 yr (M+F)	1000	2500	600	20	4000
51–70 yr (M)	1000	2000	600	20	4000
51–70 yr (F)	1200	2000	600	20	4000
71+ yr (M+F)	1200	2000	800	20	4000
Pregnant or lactating (F)					
14–18 yr	1300	3000	600	20	4000
19–50 yr	1000	2500	600	20	4000
Infants					
0–6 months	200 ^c	1000	400 ^c	20	1000
(M+F)					
6–12 months	260 ^c	1500	400 ^c	20	1500
(M+F)					
M, Male; F, female. EARs for calcium were 500 mg/d for ages 1–3 (M+F); 800 mg/d for ages 4–8 and 19–50 (M+F), and ages 51–70 (M); 1000 mg/d for ages 51–70 (F) and 71+ (M+F); and 1100 mg/d for ages 9–18 (M+F). EAR for vitamin D was 400 IU/d for all life-stage groups.					
aUL indicates level above which there is risk of adverse events. The UL is not intended as a target intake (no consistent evidence of greater benefit at intake levels above the RDA).					
bMeasures of serum 25OHD levels corresponding to the RDA and covering the requirements of at least 97.5% of the population.					
cReflects AI reference value rather than RDA. RDAs have not been established for infants.					

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3046611/>

AMA: Ross, A. C., Manson, J. E., Abrams, S. A., Aloia, J. F., Brannon, P. M., Clinton, S. K., ... Shapses, S. A. (2011). The 2011 Report on Dietary Reference Intakes for Calcium and Vitamin D from the Institute of Medicine: What Clinicians Need to Know. *The Journal of Clinical Endocrinology and Metabolism*, 96(1), 53–58. <http://doi.org/10.1210/jc.2010-2704>