QUICK GUIDE FOR LGS FAMILIES

Bone Health and Epilepsy

LGS FOUNDATION
LENNOX-GASTAUT SYNDROME

Why some seizure medicines can weaken bones, who is most at risk, and simple steps to protect them.

Anti-seizure medication side effects can weaken bones

OSTEOPENIA · thinner

OSTEOPOROSIS · fragile

Low on Vitamin D
medication signals the liver to break down Vitamin D faster than normal

Less calcium absorption
low Vitamin D levels prevent proper calcium absorption from food

Bones lose calcium
When calcium levels drop, calcium directly from bones is lost, making bones weak and brittle

Over time, bones can get thinner and break more easily. Hips and spine are most at risk.

Why it matters:

2–6×
higher chance of breaking a bone

90%
of people with epilepsy were vitamin D deficient

11-31%
of people with epilepsy develops osteoporosis due to long-term medication use

Who is more at risk

Certain seizure medicines
Long-term use of certain anti-seizure medications, some are higher risk.

Low vitamin D
Medicines, little sun exposure, or not enough in the diet.

Moving less
Limited mobility, or activity cut back for safety.

Seizure Impact
Potential micro-trauma to bones during convulsive seizures.

Growing years
Bone is built in childhood; medicines can slow it.

Hormonal Factors
Stress hormone during and after seizures or abnormal thyroid functions.

What can help

Calcium and vitamin D
Ask about doses; some medicines mean more vitamin D.

Review the medicine plan
Fewest needed; bone-friendly choices when seizures allow.

Blood tests
Calcium, vitamin D and parathyroid hormone.

Bone density (DEXA) scan
After 2+ years on anti-seizure medicines, every 2–5 years after.

Keep moving
Weight-bearing activity, supervised as needed. Home safety for fall prevention.

Additional medication
Biphosphonate may be used to prevent and treat osteoporosis.

Never stop or change a seizure medicine on your own.
Raise bone health with the neurologist and primary care team — an endocrinologist, physiotherapist or dietitian can help too.

What the research says

What we know
Older medicines and valproate have the strongest links to bone loss.

What we do not
Long-term data on newer medicines are still coming, and bone-protecting medicines are not well studied in LGS.

Resources

Bone health and epilepsy — Epilepsy Action
Calcium and vitamin D for bone health — NIH
Bone health and epilepsy — Nationwide Children's Hospital

References

Bone health in people with epilepsy — Pack, Seizure 2008
Screening bone mineral density in epilepsy — Herman, Epilepsy Currents 2009
Antiepileptics and bone health — Meier & Kraenzlin, Ther Adv Musculoskel Dis 2011
Bone health in adults with epilepsy and intellectual disability— Winterhalder & Shankar, Br J Gen Pract 2022

For information only. It does not replace advice from your own medical team.