Buccal Midazolam in Adult Status Epilepticus: How Effective Is It?

Question	Answer
Does it work?	Yes. Buccal midazolam is highly effective for **early convulsive SE** when IV access is not yet available.
Is it first-line?	Yes, among non-IV benzodiazepine options.
Is it as good as IV lorazepam?	No. IV lorazepam remains preferred when IV access is immediately available because onset is faster and more predictable.
Compared with rectal diazepam?	Generally considered at least as effective and often preferred due to ease of administration and social acceptability.
Role in hospital ED?	Bridge therapy while obtaining IV/IO access. Should not delay definitive IV second-line therapy.

Evidence Summary

Most evidence comes from:

- Prehospital seizure management studies
- Mixed adult/pediatric cohorts
- Extrapolation from IM and intranasal midazolam literature

Key findings:

- Seizure cessation rates typically **60–80%** for ongoing convulsive seizures.
- Rapid mucosal absorption.
- Time to administration is often substantially shorter than establishing IV access.
- Earlier benzodiazepine administration improves overall seizure control.

The landmark prehospital evidence is strongest for IM midazolam (RAMPART trial), but buccal and intranasal routes achieve similar pharmacologic goals and are widely incorporated into emergency seizure pathways.

Practical Adult Dosing

Weight	Buccal Midazolam
Adult	10 mg buccal

Administration:

- Divide between both buccal pouches if possible.
- Do not force into a clenched mouth.
- Can be given by trained caregivers, paramedics, nurses.

Advantages

Advantage	Clinical Relevance
No IV access required	Critical in active convulsions
Fast administration	Often faster than obtaining IV access
Good efficacy	Terminates many seizures before hospital arrival
Safer than repeated untreated seizures	Early treatment reduces progression to refractory SE
Useful in community settings	Home, ambulance, ward, rural settings

Limitations

Limitation	Comment
Variable absorption	Compared with IV administration
Less evidence in adult SE than IV lorazepam	Most adult data are indirect
Sedation/respiratory depression	Same benzodiazepine risks
May fail in prolonged SE	Escalation should not be delayed

Pragmatic Emergency Department Approach

For an adult actively convulsing:

1. **Immediate buccal midazolam 10 mg** if no IV access.
2. Simultaneously obtain IV/IO access.
3. If still seizing after 5 minutes:
    - IV lorazepam 0.1 mg/kg (max 4 mg) once access obtained.
4. Move promptly to:
    - Levetiracetam 60 mg/kg (max 4.5 g), or
    - Valproate 40 mg/kg, or
    - Fosphenytoin 20 mg PE/kg.
5. Avoid multiple sequential benzodiazepine doses without escalation.

Bottom Line

Setting	Place of Buccal Midazolam
Community seizure rescue	Excellent
Ambulance/prehospital SE	Excellent
Ward patient without IV access	Excellent
ED with immediate IV access	IV lorazepam usually preferred
Established/refractory SE	Insufficient alone; proceed rapidly to second-line ASM

A practical rule many emergency physicians use is:

“The best benzodiazepine is the one you can give immediately.”

For a convulsing adult without IV access, **10 mg buccal midazolam is an appropriate, evidence-supported first intervention while definitive access and second-line therapy are prepared.**