What is GHB?
GHB stands for gamma-hydroxybutyrate and upon ingestion causes a euphoric effect. In some countries, GHB is used as a mild anesthetic and a muscle relaxant in childbirth. Bodybuilders have also been known to use it to increase muscle growth. In the US it is used recreationally. It has recently been deemed a Class I drug (along with cocaine, heroin, etc). GBL is a precursor to GHB and is in a more concentrated form. GBL gets directly converted to GHB in the body.

How is it made?
First synthesized by French scientist Dr. Laborit 30 years ago who was exploring the effects of GABA on the brain and serendipitously produced GHB. FDA prohibited its use in 1990. It can be easily made, often in homes of users. GBL (gamma butyrolactone), its precursor, is a solvent found in floor cleaning products, nail polish, and superglue removers. Mixing GBL with sodium hydroxide results in GHB through a saponification process resulting in lye byproduct. The recipe can be found on several internet sites. You can also purchase it “on the streets” already made. It appears as either a clear liquid or a powder which is ingested.

What is the presumed pathophysiologic effect?
Is similar in action to gamma amino butyric acid (GABA), as it only differs by an OH vs an NH2 group, which acts in an inhibitory manner at the presynaptic vesicles. In high doses it increases dopamine by preventing dispersion of dopamine at the neuronal synapses in addition to causing the neuron to release more dopamine. GHB binding sites are present in the cortex, midbrain, substantia nigra, basal ganglia, and, most predominantly, in the hippocampus, where it appears to mediate intrinsic neurons. GHB also is found in the peripheral blood and readily crosses the blood-brain and placental barriers.

What is a typical dose, taste, and cost of GHB?
The word on the street is that you should start with a water bottle cap-full for GHB and a half of a cap-full for GBL. If it comes in a powder, a typical dose is ½ teaspoon. Cost for a small bottle is about $10-$16 and contains several hits. It often has a slightly salty taste or a chemical taste. When mixed with other drinks, its taste is disguised.

What do people feel like when they take GHB?
About 5-20 minutes after ingestion, people feel mild euphoria, a sense of well being and warmth. They have increased confidence, a loss of inhibitions, and are often talkative. Its effects are very similar to a “buzz” on alcohol, but much “cleaner” without the hangover of drinking alcohol. Most commonly used in California, Texas, Georgia, and Florida. It is often used as part of rave parties.

What is the danger of GHB?
Greatest risk is with overdose which is hard to control given the varying concentrations of the drug once it is produced. With increasing doses you will see similar effects of alcohol toxicity (slurring of speech, vomiting, ataxia). Higher doses, or doses mixed with alcohol, can lead to respiratory depression that will last from 3-5 hours and a completely unarousable state of consciousness. Bradycardia, blood pressure lability, loss of bowel and bladder control, hypotonia, and seizures have also been reported. Impure preparation of GHB can lead to sodium hydroxide and lye residue which causes oral and pharyngeal chemical burns.
Can you test for it?
No. Usually will make the diagnosis on history from friends who were with the patient at time of ingestion. Often the clues come after the patient wakes up and is able to speak.

What is the treatment when patients have overdosed on GHB?
Supportive care. Respiratory depression is usually the main problem. If not breathing, or if vomiting and barely breathing, consider intubation for airway protection and respiratory help. If unarousable and still breathing while maintaining a relatively adequate saturation, intubation is more controversial. Some providers feel that airway protection is necessary while others feel that these patients generally do well and that intubation carries more risk.

What happens when they wake up?
The transition from unarousable to awake happens quickly. If intubated, patients can become quite agitated and will quickly need to be extubated. Typical “weaning” protocols are not necessary. It has happened many a time that patients leave AMA from the ER after extubation, as they feel fine except for their mortification!

Are there withdrawal effects in chronic users?
Recently there have been reports suggesting a withdrawal syndrome several hours after cessation of chronic use. Symptoms are very similar to alcohol withdrawal (hypertension, tachycardia, agitation, hallucinations, tremor) and can last 5-15 days. Mechanism thought to be due to loss of GABA inhibition.

What is GHB mixed with?
Commonly taken with ecstasy or later in the evening after doing ecstasy. This is to counteract the impotency that ecstasy causes, as GHB makes getting an erection must easier and is reported to increase intensity of orgasms in women. Ketamine is also used in conjunction with “E” or “G”. Ketamine acts as a disassociative drug and is made by cooking liquid ketamine into a powder. Most ketamine comes from nearby countries where sold as veterinary supplies. It is not uncommon for friends to give amphetamines to those who are experiencing toxic effects from GHB, as they recognize that vomiting while being stuporous can be dangerous.
GHB should not be mixed with alcohol, as the effect is synergistic. It has the dubious distinction of being the “date rape” drug and has been implicated in a number of cases.

When should I endorse other causes of patients problems?
Pts with GHB overdose usually recover to pre-ingestion level within a few hours, not usually exceeding 10 hours. This gets complicated when patients take other drugs at the same time. Historical information from bystanders and friends is key.
Continued AMS or respiratory depression beyond expected GHB recovery time should prompt further work-up. Providers should always keep in mind the potential of head injury, metabolic disturbances, and infections in pts with AMS. Sexual assault should also be investigated.

References:
Multiple web sites, informational packets, word on the street from users…
www.dancesafe.com is a great website for club drug info