

(Part 1) Basic Spirits Nosing Physics and Myths

With simple science you will become armed and dangerous in your circle of spirits aficionados.

Nosing and Physics – Science Wins

Evaporation is everything. Back in the '60's when scotch popularity was enjoying a resurgence, distributors realized that American noses simply would not acclimate to the strong smell of alcohol, so they advised "Never swirl spirits". It worked. No swirl, no evaporation, no smell, and sales magically increased. Today we know the only to smell an aroma is from evaporation. Evaporation occurs because enough energy is imparted to colliding molecules in the liquid to break them free of the surface tension. Three things improve evaporation, swirling, stirring, and warming. Swirling is the most common way to promote evaporation, so swirl vigorously. A proper glass must have a large evaporative surface area.

Surface tension controls evaporation. Surface tension is a force in the surface of a liquid created by molecular cohesion, which keeps things from getting in or out of a liquid. That is why water bugs run along a water surface without falling in. Higher surface tension = slower evaporation. Alcohol surface tension is lower than water surface tension. More alcohol = less surface tension = more evaporation. More water = more surface tension = less evaporation. Swirling breaks surface tension and promotes evaporation.

Vapor pressure: Vapor pressure pushes vapors upward toward the nose. Most heavy evaporated compounds (the good smelling stuff, fatty acid ethyl esters) fall back into the liquid, but some are forced up and out by newly evaporating molecules below. Along the entire liquid surface millions of different molecules are breaking out. Vapor pressure is created by newly evaporating molecules at the surface forcing higher evaporated molecules toward the top of the glass. Evaporation creates vapor pressure. No vapor pressure = no evaporation = no smell. Swirling promotes vapor pressure.

Different compounds physically act differently. Distillation and oak ageing yields many compounds, each with different molecular structures, shapes, and weights, each of which behaves differently when they evaporate, bounce around, or collide. Evaporated molecules continually collide with each other. In a collision of two different weight molecules, lighter ones move away faster. Lighter molecules go up, heavier will fall down if not being forced up by colliding with newly evaporating molecules. Heavy is good to smell (honey, fruits, caramel, fatty acid ethyl esters). Light molecules, alcohols, are not so good and can damage your sense of smell. If glassware is too tall, many heavier components fall back into the liquid, never to be detected by the noser. Use short glassware to smell.

Ethanol alcohol masks spirit aromas. Neuro-pathological, it numbs, desensitizes, causes harsh nose burn, whiplash, and irritates the nasal lining. Drinking spirits neat or straight is actually pleasant and enjoyable without alcohol in your nose, so it makes sense avoid inhaling strong alcohol if you want to smell what's in that expensive whiskey.

Dispelling Popular Nosing Notions – Mythology Loses

Myth #1: Adding water opens up whiskey. "Open up" from wine to white dog means *enhanced* evaporation. When using tall convergent rim glasses that concentrate odors at the nose, add a few water drops to cut burn. Remember, adding water raises surface tension, and closes down ALL evaporation including alcohol. Less alcohol is mistakenly perceived as "opening up", because there is less alcohol aroma detected after adding water. Water doesn't "open up" anything drinkable by humans. If you have to add water you are using the wrong glassware (unless you can't handle the alcohol sting of straight spirits on the palate).

Myth #2: Tulip shaped glasses are better. Not if you want to smell something besides alcohol. Convergent rim glasses place all the alcohol at your nose. Think short and fat, nose close to the beverage where complex fatty acid ethyl ester aromatics lurk, large evaporation area, and rim flare to dissipate alcohol prior to nosing. A slim neck concentrates alcohol, and a flared rim releases the faster moving alcohol from the other aromas.

Myth #3: Chilled Stones or ice "smooth" a spirit. Adding chilled stones or ice decreases temperature and reduces evaporation, closing it down. If you want to know what's in the spirit, never add ice or stones. Ice cools, melts and dilutes.

Stones cool, but do not melt or dilute. Have a good reason if you insist on it. The only practical use of stones is in a cool cocktail you don't want to dilute with melted ice. If you use stones in straight spirits you shouldn't drink straight.

Myth #4: Legs or “tears” in spirits or wine indicates quality, high residual sugar or “body”. It's all about the difference in viscosity, miscibility, and surface tension gradient between alcohol and water. Alcohol and water do not mix uniformly, and surface tension differences actually pull water away from alcohol. Legs mean absolutely nothing, and they appear in all spirits and wine regardless of quality, body, or residual sugar. There goes one of the oldest bar pick-up lines.

Myth #5: Breathe through nose and mouth at the same time when nosing spirits. Partially true, it works well with convergent rim glassware, slightly easing whiplash and nose burn. Use a glass that dissipates alcohol so you can breathe deeply and detect more aromas without the nose burn.

Myth #6: Hand heat ruins the drink. Hand heat coaxes out more aromas, but don't overdo it or you will detect things you wish you hadn't. Used properly, hand heat is a valuable tool to evaluate quality and make informed buying decisions. Used indiscriminately, it ruins the drink.

A glassware design sells if it looks pretty, and function has nothing to do with appearance. When experts choose a glass, they have to discover which techniques get the most from it. Most myths are born from techniques developed for a specific glass, and using techniques indiscriminately leads to perpetuation of myth. Choose functional glassware and know how to use it.

Alcohol dissipates with glassware designed for nosing. No nose burn, numbness, pain, deadened sense of smell. Naturally Engineered Aroma Technology (NEAT) is state of the art, separating alcohol from the nosing sample. www.theneatglass.com.



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