

Name that Drug! The Side-Effect Game

By Norman M. Goldfarb

When a people are sick and have to decide whether to take a drug that may cause side effects, they can make a risk/reward decision, often ignoring substantial potential risks. However, "the public" has made it clear that, when you remove the individual from the equation, the level of risk it will tolerate in drugs is zero. In other words, many patients are risk-tolerant for themselves, but risk-averse for people they have never met. There are a few potential explanations for this apparent contradiction:

- People care more about strangers than themselves (unlikely)
- People care when strangers are injured, but less when they are cured (possible)
- People are willing to sacrifice potential benefits to strangers in order to protect them from evil pharmaceutical companies (scary)
- People who claim to speak for the public don't actually speak for the public (hmmm...)

It is also possible, in fact more-or-less proven, that people do not understand the risks associated with medicines. Otherwise, how can you explain that, every day, millions of people take drugs that offer modest benefits in total disregard of possible unpleasant and potentially serious side effects?

Table 1 presents very simplified risk profiles for eight popular medicines. Only some of the most common side effects are listed; rare side-effects, even if life-threatening, are not included. There is a good chance you've taken at least one of these drugs. Do you recognize any of them from their potential side effects? If you don't know what one of the words means, don't worry, that one will probably never happen to you. Table 2 presents a glossary of the more obscure terms.

Table 1. Side Effects of Popular Medicines¹

Drug	Common Side Effects
A	Nausea, Vomiting, Dizziness, Diarrhea, Flatulence, Constipation, Rash, Fatigue, Paraesthesia, Pruritis
B	Nausea, Dyspepsia, Vomiting, Dizziness, Diarrhea, Rash, Paraesthesia, Pruritis, Headache
C	Dyspepsia, Drowsiness, Rash, Pruritis, Nervousness, Tinnitus, Depression, Drowsiness, Insomnia, Blurred vision
D	Nausea, Dyspepsia, Vomiting, Dizziness, Drowsiness, Constipation, Rash, Fatigue, Abdominal Distension
E	Nausea, Dyspepsia, Vomiting, Ulceration, Skin Eruptions, Angioedema, Rhinitis, Bronchospasm and Dyspnoea
F	Diarrhea, Excessive Urination, Kidney Stones
G	Nausea, Flatulence, Abdominal Distension, Belching
H	Dizziness, Drowsiness, Nausea, Vomiting, Diarrhea, Nausea, Vomiting, Stomach Pains, Headache, Skin Rash, Hives

Table 3 on the next page presents the same drugs, but with a clue: how they are used.

Table 2. Glossary

Angioedema	An allergic swelling of the skin
Bronchospasm	Constriction of the bronchial air passages of the lung
Dyspepsia	A type of indigestion.
Dyspnoea	Difficult breathing.
Flatulence	Excessive gas in the digestive tract
Paraesthesia	A skin sensation, such as burning, prickling, itching, or tingling, with no apparent physical cause.
Pruritis	Severe itching, often of undamaged skin.
Rhinitis	Inflammation of the nasal mucous membranes
Tinnitus	A sound in one or both ears, such as buzzing, ringing, or whistling, occurring without an external stimulus.

Table 3. Side Effects of Popular Medicines

Drug	Uses	Common Side Effects
A	Acid reflux	Nausea, Vomiting, Dizziness, Diarrhea, Flatulence, Constipation, Rash, Fatigue, Paraesthesia, Pruritis
B	Fungicide	Nausea, Dyspepsia, Vomiting, Dizziness, Diarrhea, Rash, Paraesthesia, Pruritis, Headache
C	Analgesic, anti-inflammatory and anti-pyretic	Dyspepsia, Drowsiness, Rash, Pruritis, Nervousness, Tinnitus, Depression, Drowsiness, Insomnia, Blurred Vision
D	Antidiarrheal	Nausea, Dyspepsia, Vomiting, Dizziness, Drowsiness, Constipation, Rash, Fatigue, Abdominal Distension
E	Analgesic, anti-pyretic and anti-inflammatory	Nausea, Dyspepsia, Vomiting, Ulceration, Skin Eruptions, Angioedema, Rhinitis, Bronchospasm and Dyspnoea
F	Vitamin	Diarrhea, Excessive Urination, Kidney Stones
G	Anti-acid	Nausea, Flatulence, Abdominal Distension, Belching
H	Expectorant	Dizziness, Drowsiness, Nausea, Vomiting, Diarrhea, Nausea, Vomiting, Stomach Pains, Headache, Skin Rash, Hives

Table 4 on the next page presents the same drugs, but with a big clue: their principal ingredients.

Table 4. Side Effects of Popular Medicines

Drug	Principal Ingredient	Uses	Common Side Effects
A	omeprazole	Acid reflux	Nausea, Vomiting, Dizziness, Diarrhea, Flatulence, Constipation, Rash, Fatigue, Paraesthesia, Pruritis
B	ketoconazole	Fungicide	Nausea, Dyspepsia, Vomiting, Dizziness, Diarrhea, Rash, Paraesthesia, Pruritis, Headache
C	ibuprofen	Analgesic, anti-inflammatory and anti-pyretic	Dyspepsia, Drowsiness, Rash, Pruritis, Nervousness, Tinnitus, Depression, Drowsiness, Insomnia, Blurred vision
D	loperamide hydrochloride	Antidiarrheal	Nausea, Dyspepsia, Vomiting, Dizziness, Drowsiness, Constipation, Rash, Fatigue, Abdominal Distension
E	acetylsalicylic acid	Analgesic, anti-pyretic and anti-inflammatory	Nausea, Dyspepsia, Vomiting, Ulceration, Skin Eruptions, Angioedema, Rhinitis, Bronchospasm and Dyspnoea
F	ascorbic acid	Vitamin	Diarrhea, Excessive Urination, Kidney Stones
G	sodium bicarbonate	Anti-acid	Nausea, Flatulence, Abdominal Distension, Belching
H	guaifenesin	Expectorant	Dizziness, Drowsiness, Nausea, Vomiting, Diarrhea, Nausea, Vomiting, Stomach Pains, Headache, Skin Rash, Hives

Table 5 on the next page presents the same drugs, but with a really big clue: their trade names.

Table 5: Side Effects of Popular Medicines

Drug	Tradename	Principal Ingredient	Uses	Common Side Effects
A	Prilosec	omeprazole	Acid reflux	Nausea, Vomiting, Dizziness, Diarrhea, Flatulence, Constipation, Rash, Fatigue, Paraesthesia, Pruritis
B	Nizoral	ketoconazole	Fungicide	Nausea, Dyspepsia, Vomiting, Dizziness, Diarrhea, Rash, Paraesthesia, Pruritis, Headache
C	Advil	ibuprofen	Analgesic, anti-inflammatory and anti-pyretic	Dyspepsia, Drowsiness, Rash, Pruritis, Nervousness, Tinnitus, Depression, Drowsiness, Insomnia, Blurred vision
D	Imodium	loperamide hydrochloride	Antidiarrheal	Nausea, Dyspepsia, Vomiting, Dizziness, Drowsiness, Constipation, Rash, Fatigue, Abdominal Distension
E	Aspirin	acetylsalicylic acid	Analgesic, anti-pyretic and anti-inflammatory	Nausea, Dyspepsia, Vomiting, Ulceration, Skin Eruptions, Angioedema, Rhinitis, Bronchospasm and Dyspnoea
F	Vitamin C	ascorbic acid	Vitamin	Diarrhea, Excessive Urination, Kidney Stones
G	Alka-Seltzer	sodium bicarbonate	Anti-acid	Nausea, Flatulence, Abdominal Distension, Belching
H	Robitussin Chest Congestion	guaifenesin	Expectorant	Dizziness, Drowsiness, Nausea, Vomiting, Diarrhea, Nausea, Vomiting, Stomach Pains, Headache, Skin Rash, Hives

Congratulations! You have scored 100%, qualifying you as an expert in drug side effects. For ten extra points, what is the probability of a “common” side effect occurring?

Reference

1. South African Electronic Package Inserts, last accessed 9/9/05 at <http://home.intekom.com/pharm/>

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