IBIS Interactions™ is designed for use by physicians and pharmacists but is also accessible to patients and consumers. It is aimed at helping the busy clinician to avoid herb-drug and nutrient-drug interactions. As more and more patients flock to health food stores, the potential for serious adverse effects is rising. IBIS Interactions™ aims to be a quick online and CD-based authoritative reference guide to drug interactions with herbs and nutrients.

The user interface is simple and easy to use. The initial screen is user-friendly with four main options in the toolbar: file, edit, reference, and help. The reference section gives an herb name index, a drug name index, an AHPA botanical safety rating, and a classification structure (flowchart) for herbal products. The herb name index lists hundreds of products by their common name, botanical name, and plant family name. This is useful as many health-food products contain a combination of common plant names and scientific names.

The herbs are grouped into four categories in order to identify certain properties: OB-GYN (important hormonal effects and teratogenicity), pharmacokinetics (subdivided into bitters, hydrocolloids, irritants, tannins, and hepatic metabolism modifiers that may affect drug excretion and bioavailability); pharmacodynamics (subdivided into herbs with neuroendocrine, cardiovascular, hematological, metabolic, or immune effects); and Chinese herbs (risks of adulteration included). The pharmacodynamic grouping of plant products is quite useful as it provides an overview of herbs that may interact with drugs that affect blood pressure, coagulation, blood sugar, and fluid balance. Thus, a particular group of natural products can be listed by pharmacodynamic property, which can be used to create lists of agents that patients may choose to reduce their consumption or completely avoid, while they are taking certain medications.

The main menu for searching for information on interactions appears on the left side of the screen. There are three levels of information (organized as three boxes aligned from top to bottom) that a clinician can provide to narrow the search. First, one must select a broad category from among drugs, herbs, nutrients (amino acids, oils and fatty acids, dietary factors and accessory nutrients such as vitamins and minerals), drug classes (such as inhibitors), or herb groups (the four groups discussed earlier). This then displays information in the second box in which more specific information can be selected until, finally, a list of specific agents appears. Alternatively, the user may choose to use the search features of the program to directly search for a specific agent.

I decided to use coumadin, as an example, as it is a drug well studied in terms of interactions both with other drugs and with natural products. A direct search using “coumadin” is possible. Alternatively, the user can select “drugs” in the first box which instructs the software to provide a list of drugs by US trade name, or generic name, or a listing of all drugs which would include both trade and generic names. When the specific agent is selected from the list, information about this agent is loaded from the CD-ROM.

Once the information is loaded, the right hand side of the screen...
will display general information about the agent including its generic name, trade name, drug or herb class, clinical use, and a summary of interactions. In addition, the click of a button brings up a figure of the chemical structure of the selected drug or a photograph of the plant of that selected herbal product.

Within this information window, there are three tabs that can be selected to choose among different types of information. The first tab is a "summary" tab that provides a quick overview of the possible interactions with herbs, drugs, food, or nutrients. The second tab is labeled "interactions" and brings up very detailed information about the mechanism of interaction, impact of herbs and supplements on drug metabolism, and plants and natural substances that may have synergistic or antagonistic properties, as well as important food-drug interaction information. Case reports are clearly labeled with "report" and other information (such as laboratory studies or clinical trials) is labeled with "research" so that the user can quickly differentiate these types of information. The third tab is a "reference" tab that provides a complete listing of all of the references used to compile the interaction monograph for a specific agent. For many references, an abstract is also provided.

Returning to the coumadin example, a wide range of potential coumadin-diet and coumadin-herb interactions were reported. The information outlined the effects of a variety of nutrients on drug performance and toxicity. Important dietary information, such as a list of foods or plants high in vitamin K or coumadins and those affecting platelet function, were also provided. Reviews of herb-coumadin interactions were discussed, as was the potential interaction with grapefruit juice. In many cases, the user could click on highlighted terms for more information or further interactions. The information is an accurate interpretation of the scientific literature available to date.

The printing feature can be used to print either a summary of the interactions, a detailed report of the interactions, or a complete report of the interactions with references. Most of the features do not require an explanation but a help menu is available that explains the layout and use of the windows' menus such as printing, searching, and referencing. Integrative Medical Arts hopes to keep a database of interactions and adverse events and has a printable report sheet for reporting cases that can be mailed, faxed, or kept in the patient's personal record.

Figure 1. Summary Screen. Summary screen showing drug, herb, or nutrient search menus on the left and an overview of warfarin (Coumadin) on the right. The "Interactions" tab in the right window can be used to provide details to the interactions summarized on this screen and the "References" tab can be used to obtain complete references and in many cases abstracts of key papers. Clicking on the red icon of a camera will bring up a diagram of the chemical structure of warfarin.

The team of creators and reviewers for the CD include naturopaths, pharmacists, medical doctors, practitioners of Traditional Chinese Medicine, and other allied health workers and researchers. The referencing is quite detailed and thorough and the information in the database is scientific. The nutrients listing is fairly exhaustive and includes even the latest supplements in the health food craze. Integrative Medical Arts hopes to keep a database of interactions and adverse events and has a printable report sheet for reporting cases that can be mailed, faxed, or kept in the patient's personal record. For health care practitioners looking for a quick reference, IBIS Interactions™ is an excellent resource. It is simple to use, offers a great deal of information for safely combining medications and supplements, and is extremely well referenced. There are, however, some deficiencies in this program. While there is a great deal of general information on herbal therapies in the herb class pharmacodynamics section, only 22 herbs are specifically named in the herb section. In addition, there is a significant delay in displaying interaction data. Despite these drawbacks, it is still a quick and easy way to find information that is not readily available in standard medical texts. While the $99.95US cost may seem prohibitive, IBIS Interactions™ is a worthwhile investment for pharmacists or primary care physicians hoping to save time when dealing with questions of supplement safety and compatibility.