

on/off button **22**, an enter key **24**, and Mood Scale 2 keys **1**, **2** and **3**. As used herein the terms “buttons” and “keys” are intended to mean the same thing. The computer **10** contains memory chips (not shown) which have a set of programmed cognitive tests **103–106** (hereafter described) and which record a person’s performance time in milliseconds on those tests. The computer program uses the score in milliseconds on the third trial of these cognitive tests as a baseline measurement, which is converted to a stanine score. Subsequent trials are similarly scored and converted to stanine.

FIG. 1A shows a palm-top type computer **10a** which, when programmed with the cognitive tests **103–106**, performs the same functions as hand-held computer **10**. Accordingly, the same functional parts identified in FIG. 1, are identified in FIG. 1A with the same numerals and the letter “a”. Further description is deemed unnecessary. It is believed that the largest palm-top computer now available is 7.8 inches (19.81 cm.) long and the screen **14a** is not as large as the desired four inches (10.16 cm.) square. However, this deficiency is offset by the savings in using mass produced devices.

FIG. 2. shows the sequence of the method. From the seventeen tests of the original ANAM, four subtests were selected and sequenced for measuring cognitive processing efficiency of migraine sufferers, as follows:

1. Simple Reaction Time (SMRT), **103**
2. Running Memory Continuous Performance Task (CPT), **104**
3. Matching to Sample (M2SP), **105**
4. Mathematical Processing Task (MATH), **106**

Also included are two preliminary measures of alertness and mood that are also part of the ANAM:

1. Stanford Sleepiness Scale, **101**
2. Mood Scale 2, **102**

Description of Subtests:

1. The first step **101** is Stanford Sleepiness Scale which consists of seven statements that describe the present state of alertness or sleepiness and are numbered from one to seven, with one being highly alert and seven being close to sleep. Individuals rate their level of alertness prior to taking the first subtest of the battery. It provides a way to monitor fatigue over the course of repeated measures. Subjective ratings may be correlated with measured performance.
2. The second step **102** is Mood Scale 2 which consists of a list of thirty-six adjectives that are rated on a three-point scale. Using mouse button **16** participants respond to each adjective by indicating “yes,” “moderately,” or “no,” based on how they feel at the present time. The Mood Scale 2 categories include anger, happiness, fear (anxiety), depression, activity, and fatigue.
3. The third step **103** is Simple Reaction Time (SMRT) which presents a simple stimulus on the screen (*). In response, the individual presses the mouse button **16** each time the stimulus appears. The Reaction Time measures the speed of the motor response, the peripheral nerve conduction velocity. This represents the “hardware” of the nervous system in terms of input, followed by motor response. Actual cognitive processing time is not involved in this test.
4. The fourth step **104** is Running Memory Continuous Performance Test (CPT) which is a continuous letter comparison task. A randomized sequence of upper-case letters, A through Z, is presented one at a time in the

center of the computer screen **14**. The person presses button **16** if the letter on the screen matches the letter that immediately preceded it; and different button **18** if the letter on the screen is different than the immediately preceding letter. The task lasts approximately five minutes. The CPT was specifically designed to assess components of memory, attention, efficiency and consistency. This task is forced paced, with individuals having only a brief time in which to respond.

5. The fifth step **105** is Matching to Sample (M2SP) and consists of a number of trials that begins with a first design being presented in the center of the screen **14** for three seconds, followed by a showing that contains two designs. The person matches one of the two designs with the first design or sample by pressing the appropriate button **16** or **18**. The design is a 4×4 checkerboard and varies by the number of cells that are shaded from one cell through twelve cells.
6. The sixth step **106** is Mathematical Processing (MATH) and involves arithmetic problems presented in the middle of the screen **14**. Working from left to right, the person solves the addition and subtraction and decides if the answer is greater or less than the number 5.

As indicated, the scores are recorded by the computer **10** and the score on the third trial of these sequenced cognitive tests **103–106** are used as the baseline measurement. Subsequent trials measure cognitive change as compared to baseline. A drop of one in stanine score is an indicator of the onset of migraine and an indicator of need for prophylaxis. This was empirically determined by the following research. The preemptive prophylaxis of migraine method was used to measure cognitive deficiency during a migraine in each of a group of ten migraineurs. The method was used to measure the return of cognitive efficiency after injection of sumatriptan, an anti-migraine medication, in each of the group of ten migraineurs. The method measured cognitive change, compared to the baseline stanine score, that predicted the onset of a migraine.

The above described preemptive prophylaxis of migraine device and method allows a migraine sufferer to take medication to preempt the occurrence of head pain, associated symptoms and accompanying disability.

The invention in its broader aspects is not limited to the specific steps and apparatus shown and described, but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

I claim:

1. A preemptive prophylaxis migraine method including the steps of:
 - performing the cognitive tests of: a Simple Reaction Time, a Running Memory Continuous Performance Task, a Matching to Sample, and a Mathematical Processing Task;
 - establishing a baseline indicator from the performed tests;
 - repeating the tests; and
 - interpreting the results of the repeated tests as a percent of the baseline indicator of need for prophylaxis.
2. A preemptive prophylaxis migraine method as set forth in claim 1, wherein the step of establishing a baseline indicator uses a trial other than the first trial of the performed tests.
3. A preemptive prophylaxis migraine method as set forth in claim 2, wherein the trial used to establish the baseline indicator is the third trial.
4. A preemptive prophylaxis migraine method as set forth in claim 1, wherein the step of establishing a baseline indicator includes measuring the score in milliseconds.