Product Review

Easy@Home® Multi Drug Screen Test

Easy Healthcare Corporation
360 Shore Dr
Burr Ridge, IL 60527

September 7, 2018

By, Eugene W. Schwilke, Ph.D., D-ABFT-FT
www.toxsavvy.com

Taking a drug test at home could be necessary for several reasons. You might want to verify that you will pass the official test from your employer, or you might want to probe into your teenager's nighttime judgement with his friends last weekend. Whatever the case, you need to know that the results provided are reliable. That is why I have gone the length of providing a detailed review of one such home drug test device. This review is meant to inform the consumer about the reliability of this product so they may decide whether this test is right for them.

Methods

The easy@home®, four(4) drug test device (tests only for cocaine, cannabinoids, opiates and methamphetamine) was purchased online and tested in the home environment of the author. Urine specimens were obtained from volunteers 21 years or older. Participant 1 self-reported occasional cannabis use, with last reported use six days prior to the first test. Participant 2 (negative control) self-reported no cannabis use. Times were taken using the Stopwatch on an IPhone.

Package Insert

Excerpts of the package insert are provided below. All procedures were followed for each test, according to the manufacturer's instructions, with one exception; the final photo was taken at 10 min. This allowed the author to evaluate the test outcome if the device was read after the manufacturer's specified time of 5 min. Additional information is included in the package insert but is omitted here for brevity.

easy@Home®

Multi Drug Screen Test

Easy@Home Multi Drug Screen Test offers any combination from 2 to 15 drugs of abuse tests for 15 different drugs: Amphetamine (AMP), Barbiturates (BAR), Benzodiazepines (BZO), Cocaine (COC), Marijuana (THC), Methadone (MTD), Methamphetamine (MET), Methylenedioxymethamphetamine(MDMA), Morphine (MOP), Opiate (OPI 2000), Phencyclidine (PCP), Tricyclic Antidepressants (TCA), Buprenorphine (BUP), Oxycodone (OXY), Propoxyphene (PPX).

This package insert applies to all Multi Drug Screen Test. Therefore, some information on the performance characteristics of the product may not be relevant to your test. Please refer to the labels on the packaging and the prints on the test strip to identify which drugs are included in your test.

A rapid one step test for the qualitative detection of drug of abuse and their principal metabolites in human urine at specified cut off level.

For in vitro diagnostic use only. For over-the-counter use only.

INTENDED USE

Easy@Home Multi Drug Screen Test is rapid urine screening test. The test is a lateral flow, one-step immunoassay for the qualitative detection of specific drugs and their metabolites in human urine at the following cut off concentrations:

Drug(Identifier)	Calibrator	Cut-off level	Minimum detection time	Maximum detection time
Amphetamine (AMP)	d-Amphetamine	1000ng/mL	2-7 hours	1-2 days
Barbiturates (BAR)	Secobarbital	300 ng/mL	2-4 hours	1-4 days
Benzodiazepine (BZO)	Oxazepam	300 ng/mL	2-7 hours	1-2 days
Buprenorphine(BUP)	Buprenorphine	10 ng/mL	4 hours	1-3 days
Cocaine (COC)	Benzoylecgonine	300 ng/mL	1-4 hours	2-4 days
Marijuana (THC)	11-nor-Δ9-THC-9-COOH	50 ng/mL	2 hours	Up to 5+ days
Methadone (MTD)	Methadone	300 ng/mL	3-8 hours	1-3 days

MATERIAL

Material provided

- One pouch containing a test panel and a desiccant.
- Package insert

Material Required But Not Provided

- Timer
- Urine cup

SPECIMEN COLLECTION AND PREPARATION

Collect a urine sample in the urine cup. Urine specimens may be refrigerated 2°C-8°C (36°F-47°F) and stored up to forty-eight hours. For longer storage, freeze the samples at -20°C (-4°F) or below. Bring frozen or refrigerated samples to room temperature before testing. Use only clear aliquots for testing.

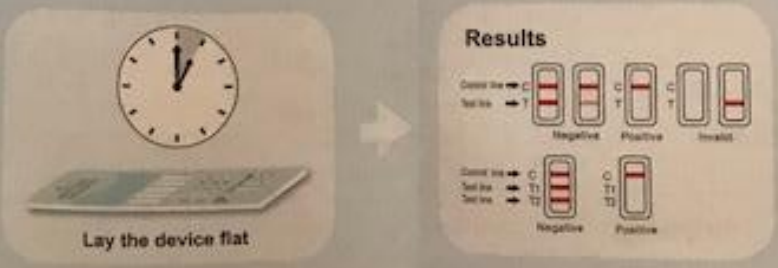
TEST PROCEDURE

Test must be in room temperature 10°C-30°C (50°F-86°F).

1. Open the sealed pouch by tearing along the notch. Remove the test device from the pouch.
2. Hold the one side of the device with one hand. Use the other hand to pull out the cap and expose the absorbent end.
3. Immerse the absorbent end into the urine sample about 10 seconds. Make sure that the urine level is not above the "MAX" line printed on the front of the device.
4. Lay the device flat on a clean, dry, non-absorbent surface.
5. Read the result at 5 minutes. Do not read after 5 minutes.

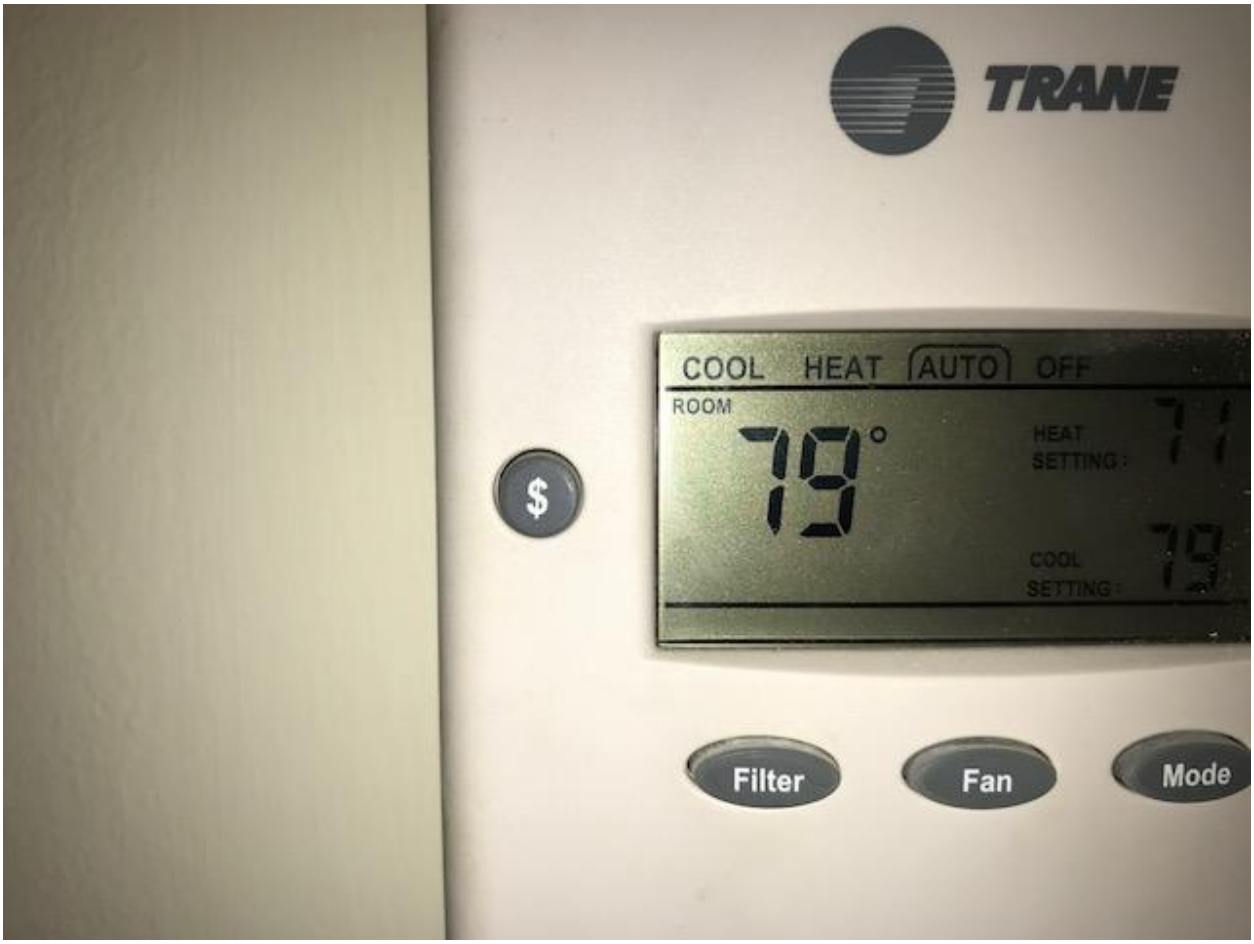
Step 1:
Pull the cap off and immerse the strips into urine for 10 seconds

Step 2:
Read results in 5 minutes. Do not read after 5 minutes.



Room Temperature

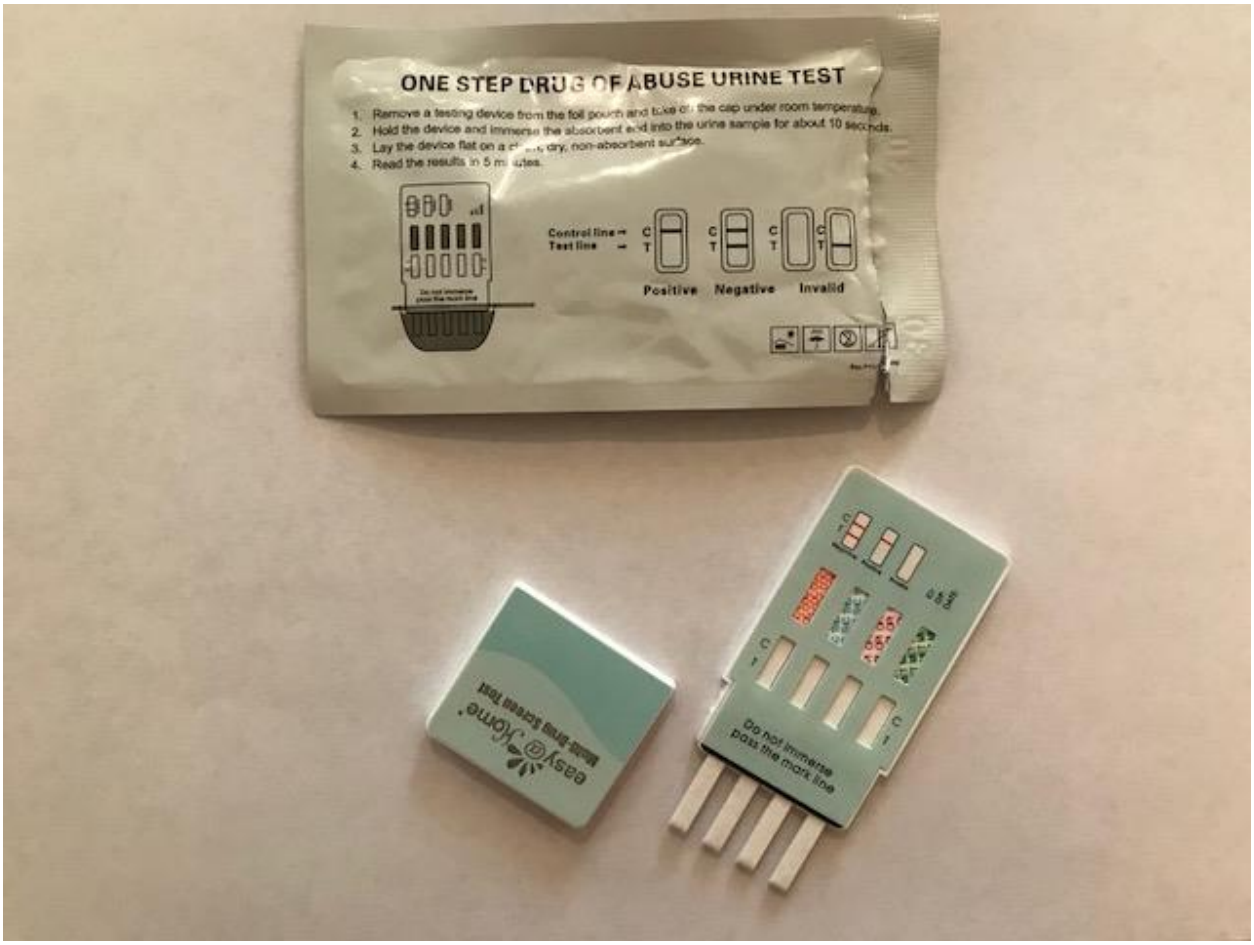
The temperature of the room in which the tests were conducted was 79°F (26.1°C).



Results

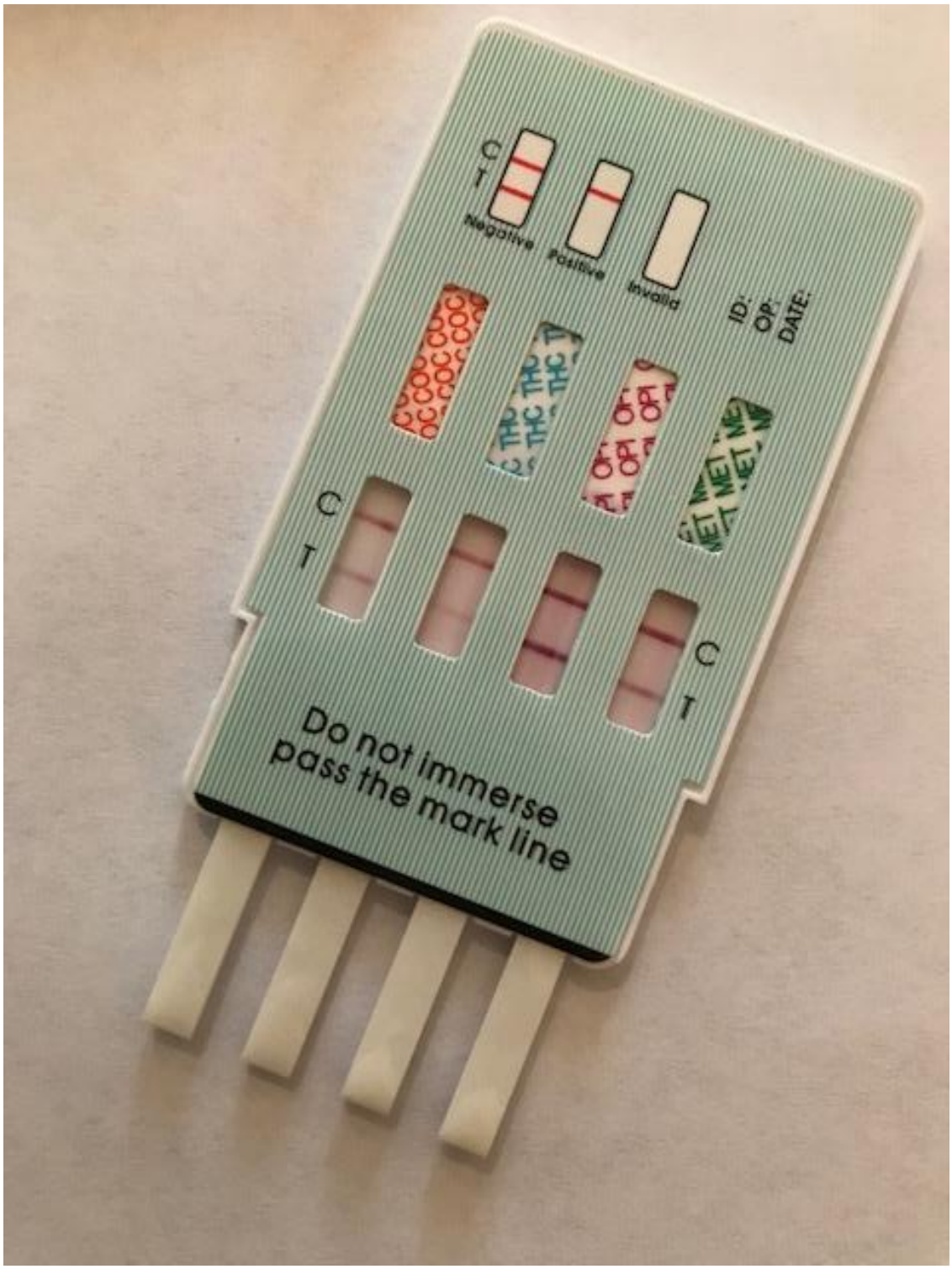
Participant 1: Pre-test Device

The device was removed from the package and the end cap removed. This photograph shows the baseline indicator lines of the device. No colored lines are present for any drug (cocaine, cannabinoids, opiates, methamphetamine).



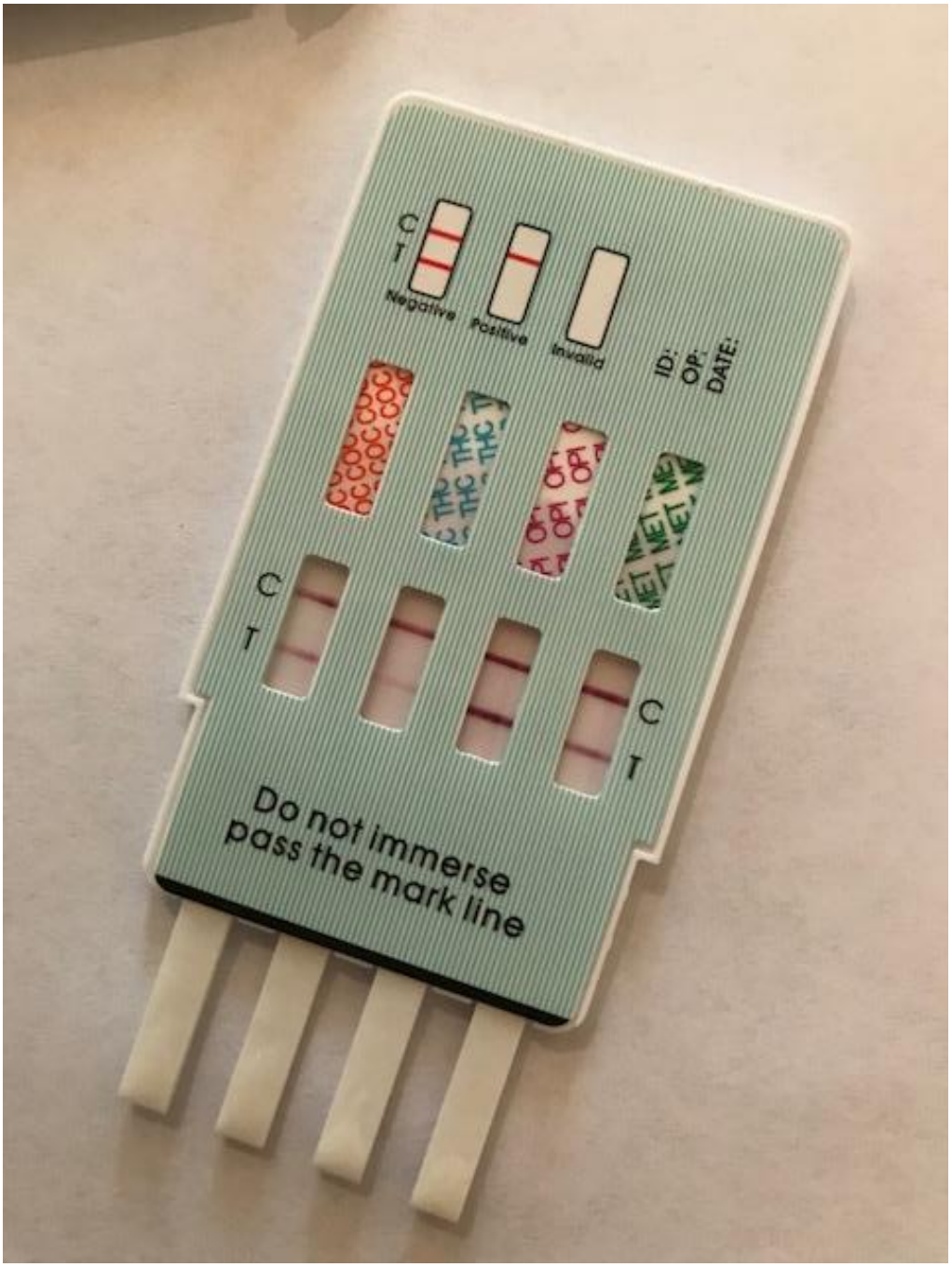
Participant 1 (device 1): 2.5 min

The device test strips were submerged into the urine for approximately 10 sec, per the instructions. The device was laid on a flat surface and a photograph was taken approximately 2.5 min later. All control lines are present, indicating the sample/test is valid.



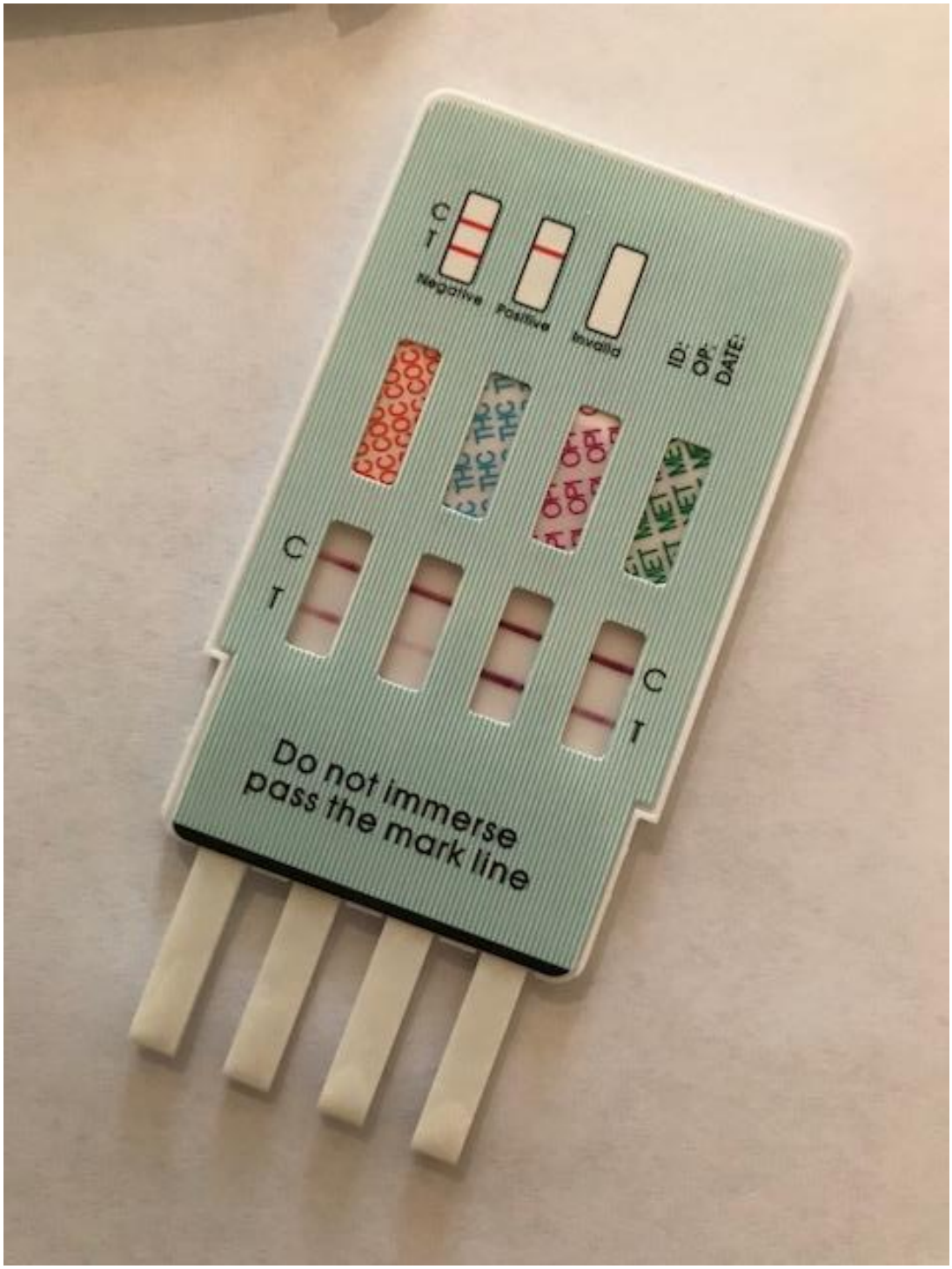
Participant 1 (device 1): 5 min

After approximately 5 min, the following photograph was taken of the same device. This photo documents what would be observed as the valid test outcome according to the manufacturer.



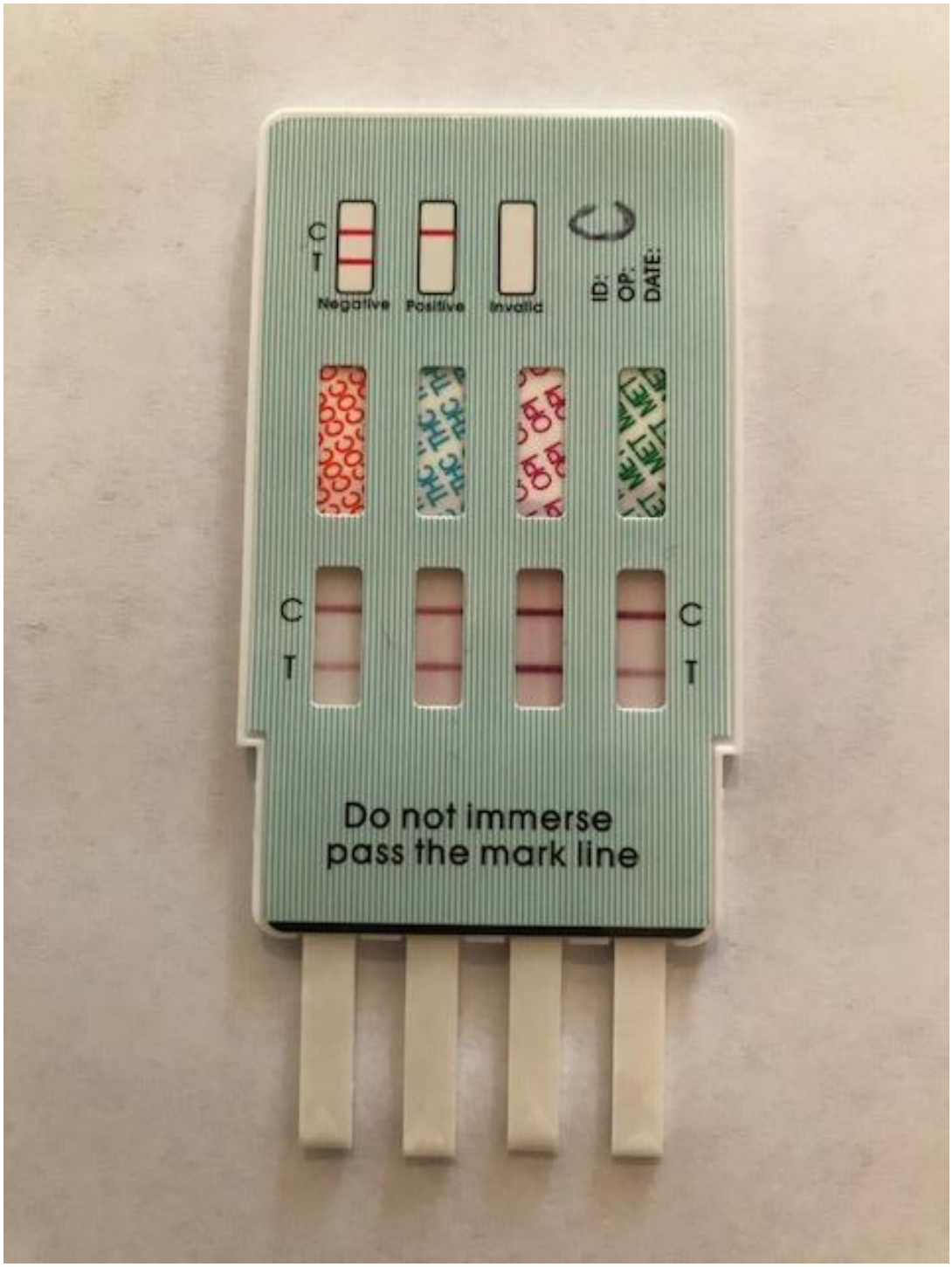
Participant 1 (device 1): 10 min

After approximately 10 min, the following photograph was taken of still the same device. While this is not considered a valid test, this photo documents what would be observed at a later time.



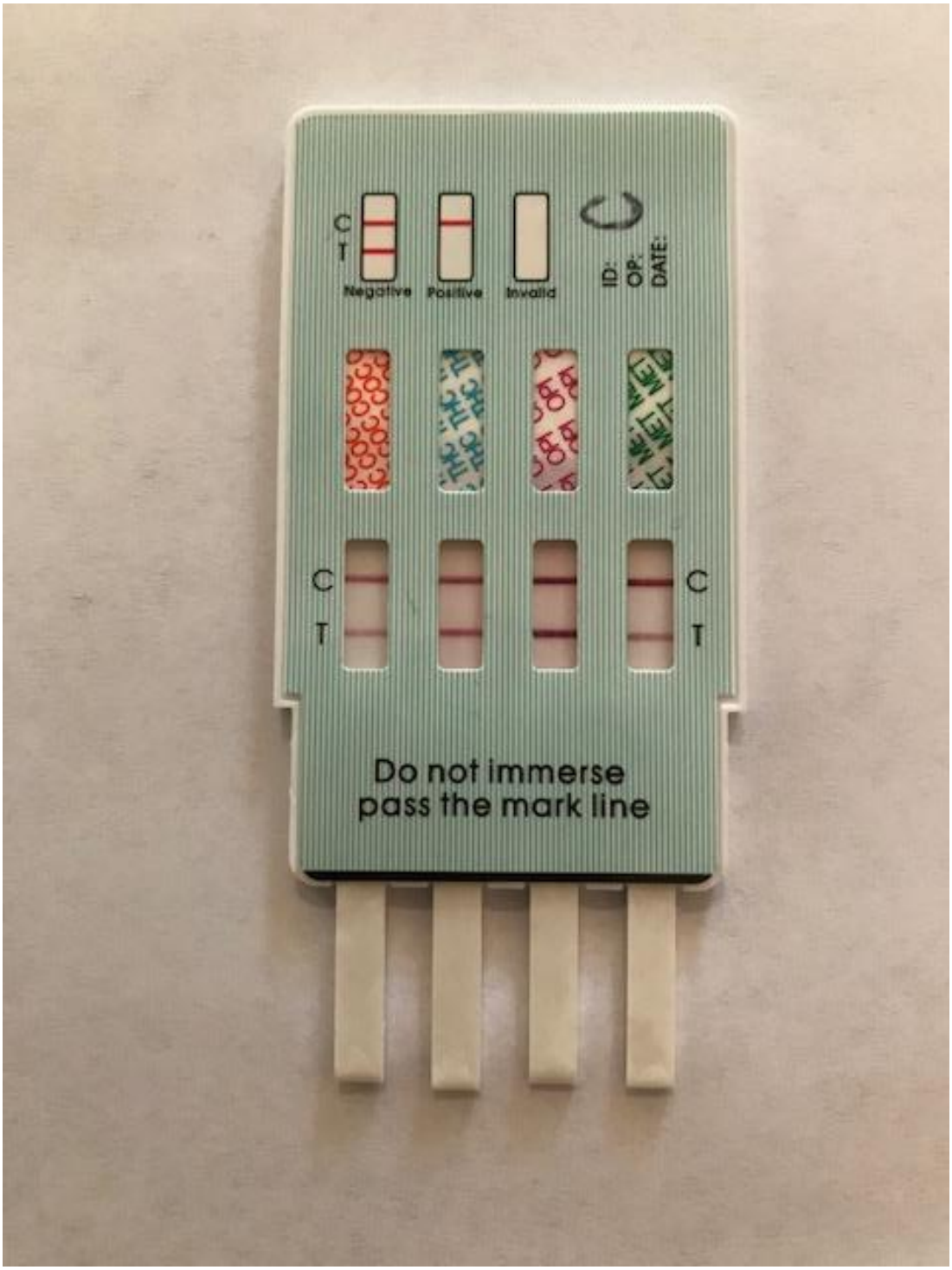
Participant 2 (device 1): Control Donor 2.5 min

The device test strips were submerged into the urine for approximately 10 sec, per the instructions. The device was laid on a flat surface and a photograph was taken approximately 2.5 min later. All control lines are present, indicating the sample is valid.



Participant 2 (device 1): Control Donor 5 min

After approximately 5 min, the following photograph was taken. This photo documents what would be observed as the valid test outcome according to the manufacturer.



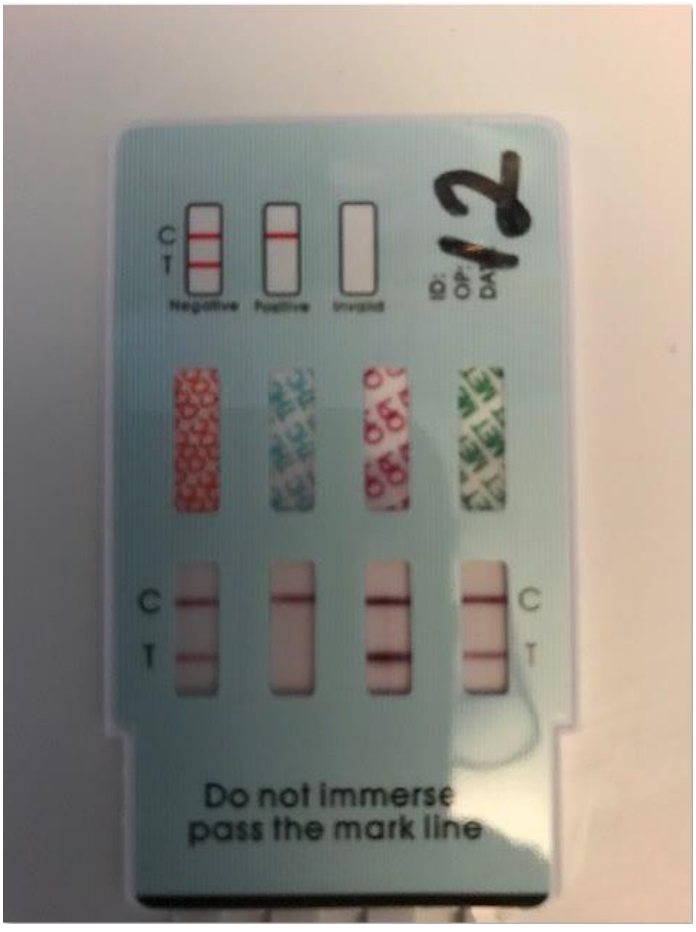
Participant 1 (devices 2-4): Repeat

As with all drugs, urine cannabis levels are associated with the dose and dose frequency. Compared to frequent cannabis users, occasional users will have lower peak urine concentrations and shorter duration of detection. The negative test for Participant 1 may have been due to low dose or timing of collection after dosing. After six days, urine concentrations are expectedly low so it is no surprise that the first test was negative. In order to produce a positive control for this assessment, we repeated collections from Participant 1 at the following times (three separate devices) after self reported use at 4:45PM.

Collected	Interval (h)	Result
7:45 PM	~3	Positive
10:50 PM	~6	Positive
4:15 AM	~11.5	Positive

Example: Participant 1 Repeat: 5 min ~11.5h after dose

Device 4 (collected ~11.5h after dose) test strips were submerged into the urine for approximately 10 sec, per the instructions. The device was laid on a flat surface and a photograph was taken approximately 5 min later. This photo documents what would be observed as the valid test outcome according to the manufacturer.



Discussion

Let's face it. Drug use is a fact of life in our society, but home drug tests provide an effective means for monitoring drug activity in our homes and communities. This device also could be applied in professional settings, such as doctor's offices or addiction clinics. Rigorous testing by the manufacturer must ensue prior to marketing these products to consumers, yet their performance still must be monitored by the end user. An incorrect result could have a huge impact on a person's safety or well being.

The principle of the test is described in the package insert as a competitive immunoassay. This technology (or similar) has been used in laboratories for several decades and in many labs provides the initial qualitative evaluation of the specimen. In most cases, a laboratory would conduct further testing to identify the specific substance(s) present in positive samples. The package insert does a good job of describing the principle of the test as well as possible limitations including (but not limited to) potentially interfering compounds. This is not surprising since the FDA requires test manufacturers to undergo extensive development and validation of their product to gain 510(k) status (FDA Approval).

Some information in the package insert should be interpreted with caution. In the Intended Use section, there is a table that provides important information on the assay cutoff, and the minimum and maximum detection times of various drugs. The detection times indicated for Benzodiazepines, Marijuana and Tricyclic Antidepressants are listed as 1-2, Up to 5+days, and 2-7 days, respectively. These times may be too short for some people, depending the extent of drug exposure prior to the test. These compounds may linger in the body longer and thus may be excreted slower than other drugs. Despite this, the insert provides additional information in the Question and Answers section; "[The product is]…more than 99% accurate in detecting specific drugs according to the designated cut-off levels. However, if a more sensitive test is administered, there is a chance of testing positive if drugs are present in urine." This suggests a strong likelihood that a laboratory would get the same result; however, the likelihood diminishes when urine drug concentrations are at or near the cutoff. Benzodiazepines, marijuana and tricyclic antidepressants are examples of compounds that may remain in the urine near the cutoff longer and could result in discordant outcomes between the device and a laboratory.

The test was repeated in Participant 1 in order to obtain a positive control. All tests were positive at all time points. Interestingly, there was an invalid result (no color indicated in the Control lane) for Methamphetamine (photo not shown) in one sample.

The Results section (see package insert above) instructs that the absence of a line in the "Test line" position indicates a positive test. Further, the Question and Answers section provides additional information about the intensity of the line, if present. Specifically, "The Drug Line is lighter than the Control Line. Does this mean some drug is present? No. ….no matter how dark or light, [any line] is considered a negative result…" The cannabinoid test for Participant 1 had a lighter colored line; however, it is faint, but visible at all time points. Similarly, the cocaine test for Participant 2 had a lighter colored line. Both tests are considered negative.

Overall, the easy@home® test device performed well. The invalid results obtained are a built-in function that provides critical information about the validity of the test. If insufficient urine is absorbed into the strip, then the reliability of the test is in question. Therefore, any invalid result obtained here

does not diminish the device rating. I would recommend using this device at home, keeping in mind that several devices should be on hand in the event of an invalid test or further testing is needed. There are several options on Amazon from this manufacturer that include different drug panels as well as different numbers of devices per unit.

Limitations

This review is NOT a scientific study, although it is presented in a similar format to a peer reviewed scientific article. Only one box of devices was tested, only one cannabis user participated, and it was conducted in my house using less than "scientific" instrumentation. However, the intent was to simulate a real world environment. Additionally, only THC was tested while three other drugs on the same device were not. Therefore, we were only able to review the accuracy and reliability of the marijuana test.

Rating

Overall Rating	Ease of Use	Information	Materials
Good	Good	Good	Good

Scale: (Good/Fair/Poor)

***Disclaimer**: The views, thoughts, and opinions expressed in the text belong solely to the author, and not necessarily to the author's employer, organization, committee or other group or individual.*