I claim:

1. A method for diagnosing non-alcoholic steatohepatitis (NASH) or hepatic fibrosis in a human, comprising:

(a) determining an amount of acetaminophen (APAP)-glucuronide in a plasma sample and/or a urine sample obtained from a human subject after the human subject was administered acetaminophen (APAP), wherein the human subject is at risk of non-alcoholic steatohepatitis (NASH) or hepatic fibrosis;

(b) comparing the amount of APAP-glucuronide in one or both of the plasma sample and the urine sample to a control; and

(c) identifying the human subject as having non-alcoholic steatohepatitis (NASH) or hepatic fibrosis if the amount of APAP-glucuronide in one or both of the plasma sample and the urine sample is elevated relative to the control.

2. The method of claim 1, wherein the human subject at risk of NASH suffers from one or more of non-alcoholic fatty liver disease; metabolic syndrome, obesity, dyslipidemia, insulin resistance, and diabetes.

3. The method of claim 1, wherein the human subject at risk of hepatic fibrosis suffers from, or previously suffered from, one or more conditions selected from the group consisting of α1-antitrypsin deficiency, Wilson's disease, fructosemia, galactosemia, Type III, IV, VI, IX, and X glycogen storage diseases, hemochromatosis, Gaucher's disease, Zellweger syndrome, tyrosinemia, bacterial infection, viral infection, parasitic infection, Budd-Chiari syndrome, alcoholism, drug addiction, heart failure, hepatic veno-occlusive disease, and portal vein thrombosis.

4. The method of any one of claims 1-3, wherein the amount of APAP-glucuronide is measured in a plasma sample, and wherein a measurement is made between 1 minute and 180 minutes after APAP administration, or wherein the amount of APAP-glucuronide is measured in a urine sample, and wherein a measurement is made between 120 minutes and 480 minutes after APAP administration.

5. A method for identifying a human subject at risk of an adverse drug reaction, comprising

(a) determining an amount of acetaminophen (APAP)-glucuronide in a plasma sample and/or a urine sample obtained from a human subject after the human subject was administered acetaminophen (APAP), wherein the human subject is in need of treatment with a therapeutic drug selected from the group consisting of doxorubicin,
morphine, cisplatin, ectoposide, methotrexate, glucuronidated conjugated drugs, glutathione-conjugated drugs, and sulfate-conjugated drugs;

(b) comparing the amount of APAP-glucuronide in one or both of the plasma sample and the urine sample to a control; and

(c) identifying the human subject as at risk of an adverse drug reaction if the amount of APAP-glucuronide in one or both of the plasma sample and the urine sample is elevated relative to the control.

6. A method for determining an appropriate dosage of a therapeutic drug selected from the group consisting of doxorubicin, morphine, cisplatin, ectoposide, methotrexate, glucuronidated conjugated drugs, glutathione-conjugated drugs, and sulfate-conjugated drugs for a human subject, comprising

(a) determining an amount of acetaminophen (APAP)-glucuronide in a plasma sample and/or a urine sample obtained from a human subject after the human subject was administered acetaminophen (APAP), wherein the
human subject is in need of treatment with a therapeutic drug selected from the group consisting of doxorubicin, morphine, cisplatin, ectoposide, methotrexate, glucuronidated conjugated drugs, glutathione-conjugated drugs, and sulfate-conjugated drugs;

(b) comparing the amount of APAP-glucuronide in one or both of the plasma sample and the urine sample to a control; and

(c) determining that the human subject should receive a non-standard dosage of the drug if the amount of APAPglucuronide in one or both of the plasma sample and the urine sample is elevated relative to the control.

7. The method of any one of the preceding claims, wherein the amount of APAP-glucuronide is measured in a plasma sample, and wherein a measurement is made between 1 minute and 180 minutes after APAP administration.

8. The method of any one of the preceding claims, wherein the amount of APAP-glucuronide is measured in a urine sample, and wherein a measurement is made between 120 minutes and 480 minutes after APAP administration.

9. The method of any one of the preceding claims, wherein between 250 mg and 1000 mg of APAP was administered to the human subject.

10. The method of any one of the preceding claims, wherein the determining, comparing, and identifying steps are automated.

11. A machine readable storage media, comprising a set of instructions for causing a metabolite measuring device to carry out the determining, comparing, and identifying steps of any one of the preceding claims.

I claim:

1. A method for diagnosing a hepatic disorder in a human, comprising

(a) determining an amount of acetaminophen (APAP)-glucoronide in a plasma sample and/or a urine sample obtained from a human subject after the human subject was administered acetaminophen (APAP), wherein the human subject is at risk of a hepatic disorder;

(b) comparing the amount of APAP-glucoronide in one or both of the plasma sample and the urine sample to a control; and

(c) identifying the human subject as having a hepatic disorder if the amount of APAP-glucoronide in one or both of the plasma sample and the urine sample is elevated relative to the control.

2. The method of claim 1, wherein the human subject at risk of a hepatic disorder suffers from one or more of metabolic syndrome, obesity, dyslipidemia, insulin resistance, and diabetes.

3. The method of claim 1, wherein the human subject is at risk of non-alcoholic steatohepatitis (NASH).

4. The method of claim 3, wherein the human subject at risk of NASH suffers from one or more of non-alcoholic fatty liver disease; metabolic syndrome, obesity, dyslipidemia, insulin resistance, and diabetes.

5. The method of claim 1, wherein the human subject is at risk of hepatic fibrosis.

6. The method of claim 5, wherein the human subject suffers from, or previously suffered from, one or more conditions selected from the group consisting of α_1-antitrypsin deficiency, Wilson's disease, fructosemia, galactosemia, Type III, IV, VI, IX, and X glycogen storage diseases, hemochromatosis, Gaucher's disease, Zellweger syndrome, tyrosinemia, bacterial infection, viral infection, parasitic infection, Budd-Chiari syndrome, alcoholism, drug addiction, heart failure, hepatic veno-occlusive disease, and portal vein thrombosis.

7. The method of claim 1, wherein the human subject is at risk of hepatitis.

8. The method of claim 7, wherein the human subject suffers from, or previously suffered from, one or more disorders selected from the group consisting of alcoholism, drug addiction, bacterial infection, viral infection, fungal infection, protozoan infection,

helminth infection, spirochete infection, sarcoidosis, ulcerative colitis, and Crohn's disease.

9. The method of any one of claims 1-8, wherein the amount of APAP-glucuronide is measured in a plasma sample, and wherein a measurement is made between 1 minute and 180 minutes after APAP administration.

10. The method of any one of claims 1-8, wherein the amount of APAP-glucuronide is measured in a urine sample, and wherein a measurement is made between 120 minutes and 480 minutes after APAP administration.

11. The method of any one of claims 1-10, wherein between 250 mg and 1000 mg of APAP is administered to the human subject.

12. A method for identifying a human subject at risk of an adverse drug reaction, comprising

(a) determining an amount of acetaminophen (APAP) in a plasma sample and/or a urine sample obtained from a human subject after the human subject was administered acetaminophen (APAP), wherein the human subject is in need of treatment with a therapeutic drug other than acetaminophen;

(b) comparing the amount of APAP-glucuronide in one or both of the plasma sample and the urine sample to a control; and

(c) identifying the human subject as at risk of an adverse drug reaction if the amount of APAP-glucuronide in one or both of the plasma sample and the urine sample is elevated relative to the control.

13. A method for determining an appropriate dosage of a therapeutic drug for a human subject, comprising

(a) determining an amount of acetaminophen (APAP) in a plasma sample and/or a urine sample obtained from a human subject after the human subject was administered acetaminophen (APAP), wherein the human subject is in need of treatment with a therapeutic drug other than acetaminophen;

(b) comparing the amount of APAP-glucuronide in one or both of the plasma sample and the urine sample to a control; and

(c) determining that the human subject should receive a non-standard dosage of the drug if the amount of APAP-glucuronide in one or both of the plasma sample and the urine sample is elevated relative to the control.

14. The method of claim 12 or 13, wherein the human subject is in need of treatment with one or more therapeutic drug selected from the group consisting of doxorubicin, cisplatin, ectoposide, methotrexate, glucoronidated conjugated drugs glutathione-conjugated drugs, and sulfate-conjugated drugs.

15. The method of any one of claims 12-14, wherein the amount of APAP-glucoronide is measured in a blood sample, and wherein a measurement is made between 1 minute and 180 minutes after APAP administration.

16. The method of any one of claims 12-15, wherein the amount of APAP-glucoronide is measured in a urine sample, and wherein a measurement is made between 120 minutes and 480 minutes after APAP administration.

17. The method of any one of claims 12-16, wherein between 250 mg and 1000 mg of APAP is administered to the human subject.

18. The method of any one of claims 1-17, wherein the measuring, comparing, and identifying steps are automated.

19. A machine readable storage media, comprising a set of instructions for causing a metabolite measuring device to carry out the measuring, comparing, and identifying steps of any one of claims 1-18.