displayed, which indicate the respiratory status, alert the clinician and/or indicate action required, and/or a change in therapy is actioned, automatically and/or manually.

In one aspect, the present disclosure may be said to comprise an apparatus for assessing a patient receiving respiratory support during a session to determine a respiratory status comprising: one or more sensors, or inputs for one or more sensors, for receiving for a plurality of time points, one or more patient parameters for a patient, the one or more patient parameters comprising at least one respiratory parameter, a controller for: determining, for each time point, a respiratory index from the one or more patient parameters, and determining, from a change in respiratory index over time, a patient respiratory status, and/or displaying on a display a change in respiratory index over time for a user to determine a patient respiratory status.

Optionally the patient is receiving respiratory support, and optionally the respiratory support is: high flow respiratory support.

Optionally: the assessment apparatus provides the respiratory support, or the assessment apparatus is separate to a respiratory support apparatus.

Optionally the session:

is a treatment session,
a day or part thereof,
a night or part thereof,
sub-sessions,
a length of time.

Optionally the one or more patient parameters are one or more lung mechanics parameters and one or more oxygenation parameters.

Optionally a lung mechanics parameter can be one or more of:

- Respiratory rate
- expiratory time,
- minute ventilation

Optionally an oxygenation parameter can be one or more of:

- FiO2
- FdO2
- O2 fraction

Claims

1. An apparatus for assessing a patient receiving respiratory support during a session to determine a respiratory status comprising:

one or more sensors, or inputs for one or more sensors, for receiving for a plurality of time points, one or more patient parameters for a patient, the one or more patient parameters comprising at least one respiratory parameter,

a controller for:

determining, for each time point, a respiratory index from the one or more patient parameters, and

determining, from a change in respiratory index over time, a patient respiratory status, and/or

displaying on a display a change in respiratory index over time for a user to determine a patient respiratory status.

2. An apparatus according to claim 1 wherein the patient is receiving respiratory support, and the respiratory support is high flow respiratory support.

3. An apparatus according to claim 1 or 2 wherein the session:

is a treatment session,

a day or part thereof,

a night or part thereof,

sub-sessions,

a length of time.

4. An apparatus according to claim 1 to 3 wherein:

the apparatus provides the respiratory support.

5. An apparatus according to any one of claims 1 to 4 wherein the one or more patient parameters are one or more lung mechanics parameters and one or more oxygenation parameters.

6. An apparatus according to claim 5 wherein a lung mechanics parameter can be one or more of:

- Respiratory rate
- Expiratory time
- Minute ventilation

7. An apparatus according to claim 5 or 6 wherein a oxygenation parameter can be one or more of:

- FiO2
- FdO2
- O2 fraction
- SpO2

8. An apparatus according any one of claims 1 to 7 wherein the respiratory index is ROX index.

9. An apparatus according to claim 8 wherein components of the ROX index are: respiratory rate, SpO2, and/or FiO2, FdO2, and/or O2 fraction.

10. An apparatus according to claim 9 wherein the respiratory rate is determined by the controller from one or more patient parameters received from the one or more sensors.

11. An apparatus according any one of claims 1 to 10 wherein the respiratory index is ROX index, determined from respiratory rate, FiO2 and/or SpO2.

12. An apparatus according any one of claims 1 to 11 comprising displaying ROX index numerically and/or graphically on the display.

13. An apparatus according any one of claims 1 to 12 wherein determining the change in respiratory index over time comprises:

for a plurality of time points, determining a change in respiratory index over time for each of the plurality of time points.

14. An apparatus according to claim 13 further comprising displaying, for the plurality of time points, the change in respiratory index over time for each of the plurality of time points.

15. An apparatus according to any preceding claim wherein determining a change in respiratory index over time comprises determining a trend in the respiratory index and/or wherein the trend comprises a plurality of instantaneous trends, determining a plurality of instantaneous trends over time, wherein a trend or an instantaneous trend is represented with a trend parameter comprising magnitude and a direction, and optionally could be in the form of:

a vector, or

a slope and magnitude.

16. An apparatus according to claim 14 wherein determining from the change in respiratory index over time, comprises the controller calculating and comparing the change to relationship information.

17. An apparatus according to any one of claims 1 to 16 further comprising the controller displaying:

a respiratory index threshold and/or change indicator threshold.

18. An apparatus according any one of claims 1 to 17 further comprising communicating the determined change in respiratory index to:

a clinician, for example in the form of a message, alarm, respiratory status, respiratory index, and/or

a respiratory support apparatus.

19. An apparatus according any one of claims 1 to 18 wherein the one or more sensors comprise:

one or more sensors arranged to sense a flow path of a respiratory support apparatus, and/or

one or more sensors arranged to sense parameters of a patient; and

wherein the controller receives the one or more patient parameters from the one or more sensors.

20. An apparatus according any one of claims 1 to 19 wherein the apparatus is one or more of a:

respiratory apparatus,

mobile device,

a remote monitoring system,

either alone or integrated.