

Foot in the mouth



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A dental article titled “Foot in the Mouth” is bound to invoke a lot of curiosity as well as interest. Metaphorically, the “foot in the mouth” is something that does not happen by choice, but rather accidentally. This article shows an almost unbelievable connection between the foot and the mouth in multiple ways, all of which are connected to each other. In previous articles the Smylist® negative cascade effect has been explained which connects the mandible to the musculo skeletal system and other body systems with a number of potential systemic problems that can arise. This chain of events ultimately leads to the feet.

In fact, the feet can provide extensive information about what is happening in the mouth and hence the title of the article. Not only do the feet provide diagnostic data but are a benchmark for how therapy is progressing and also serve as a warning signal of an impending major systemic problem. The foot data can be analysed by visual assessment, by checking out home used footwear and the best way, by digital measurement.

THE FEET AND THE MANDIBLE

It is crucial to understand the cause and effect is one way. It is an improperly placed mandible which leads to an unbalanced body which can be seen on the feet. It is not the feet which lead to an improperly placed mandible. In the Smylist® concept, an improperly placed mandible is called a rotated mandible. The mandible may get rotated laterally or vertically. Lateral rotation can be to the right or the left and vertical rotations usually are upwards with an occasional downward rotation. These rotations may be stand alone or can be combined, for e.g. a right as well

as an upward rotation. It is evident that a mandible cannot be right as well as left rotated. It is either left or right. The mandibular rotations are also classified as either mild, moderate or advanced. It is also possible to have any combination of degree of severity with the kind of mandibular rotation for e.g. a mild right rotation with an advanced upward rotation. Any kind of permutation and combination is possible. Each of these combinations leads to body imbalances which translates into a certain pattern. A careful scrutiny of the patterns and load distributions will arrive at a logical conclusion of the type and extent of the mandibular rotation.

A rotated mandible causes a chain reaction of various parts of the musculo-skeletal system. The neck and shoulder starts compensating for a lateral rotation. For a moderate to severe upward rotation, the neck protrudes forward. As a further progression, the contra lateral shoulder rotates forward which leads to the other side hip to rotate to maintain the balance. The legs are mere extensions of the hips and kind of follow the pattern. This logical flow connects a rotated mandible to the feet. This flow provides excellent and very important information regarding the mandibular rotation.

Obtaining data of the feet, even though not extremely complex, is still a daunting prospect. The visual examination of the feet positions does reveal a lot, but is limited in scale and precision. If the patients foot wear is available, it is possible to get wear patterns, but such foot wear is not easy to get. Also, these wear patterns are just an indicator and cannot give precision

in terms of numbers. In the quest to achieve such digital data, Smylist® came up with the concept of creating a digital input device, which could capture such foot data in terms of actual numbers. Once the device was available, it was a natural progression of events to create an artificial intelligence logic that would take the complex set of data, with all its permutations and combinations, process it to point towards the kind of mandibular rotation that the feet represented by working in reverse from the feet upwards. This was in the literal sense putting the “foot in the mouth”.

THE STATICUS

The Staticus is a one of its kind diagnostic device, created for usage by oral health professionals for diagnosing the type, extent and severity of mandibular rotations. This in turn leads to the extremely critical determination of the negative effects of the rotation on the dentition as well as the rest of the body. The device is a sensor sandwiched between conductive material which can electronically measure the loads exerted on the sensor by the patients feet. The device is made of foldable material and connects to a Windows based computer via Bluetooth or a USB cable.

The Staticus connects to the Smylist® Digital Assistant software which captures the data from the feet. This data is processed by the software and is presented in a very simple and easy to read manner along with a suggested diagnosis of the type of mandibular rotation present. This is based on multiple parameters of the loads exerted by the two feet as well as the patterns presented. A combination of all such extremely detailed data is highly valuable information for a dentist conversant with the Smylist® concept and especially for those who have not extensively learnt and studied the Smylist® theory.



Figure 1: The Staticus diagnostic device

In fact, even though designed primarily for dental offices, the Staticus can well be used in any diagnostic centre, gyms, podiatrists, physiotherapists and a wide vista of medical and paramedical service providers. The device is non invasive and the test does not take more than a minute to be completed. There are no leads connected to the body and nor is there any kind of electronic signal or ultrasonic waves sent to the body. In fact, the device does nothing to the patient, but rather it is the patient who does something to the device.

Using the Staticus is a piece of cake. The device is a mat which has to be laid out on the floor and then all that needs to be done is for the patient to step on the device. Instantly the foot pressure image is seen on the computer window and all that is required is one mouse click to capture all the necessary data. All this only takes a few seconds of time. An extremely critical and important aspect is the manner in which the data is captured.

Conventionally almost all foot pressure data acquisition is done by asking the patient to step on a predefined area marked out for the feet. Smylist® firmly believes that this method will not generate proper data and it will be of very limited value. This would not be the natural posture of the body or of the feet, especially if the body is not in balance due to some kind of existing mandibular rotation.

This problem has been resolved by Smylist® with a very simple and innovative idea and it has been termed as the Smylist® three jump test.

THE SMYLIST® THREE JUMP TEST

The three jump test is extremely simple and requires the patient to just lightly jump with both feet on the same spot three times. The jumps are just light and short jumps as if jumping with a skipping rope. It is a good idea to make the patient do some practice 2 to 4 times till the patient is comfortable. Then the patient is asked to step on the mat within the boundary limits and just asked to do one set of three jumps. Immediately after the third jump the patient should be stationary and the mouse on the software clicked to capture the data.



Figure 2: Data being captured for a patient on the foot mat

The logical science of this three jump test is incredibly simple. Making the patient jump up and down causes the legs to momentarily be suspended and dangling from the rotated hip position, which in turn is a compensation of the rotated shoulder, which in turn is a compensation of the rotated mandible. While jumping and landing the feet will arrive at the natural standing position of the individual. This position of the feet would thus be a true representative of the natural body posture with its imbalance, if any.

The Staticus has an antiskid layer at the bottom which does not allow it to shift or move during the test, and hence is completely safe for the patient during the test. The entire process of showing the patient and then training and carrying out the test takes all

of just one minute. It is akin to checking the body weight on a digital weighing scale. This very innovative method is one of the most dramatic aspects of how significant information is obtained from patients in an almost instantaneous manner.

FOOT ANALYTICS

The data is digitally captured as binary information and is a matrix of pressure values for each foot. This binary information is decoded by the Smylist® Analytics software and the foot image is presented in its own unique format. The load distribution between the two feet, load pattern on each foot, the positioning, angulation and foot pattern is immediately visualized. The

software also provides a detailed PDF report with all the above mentioned information in numbers.

It also uses the built in artificial intelligence to generate a provisional diagnosis of the mandibular rotation if any. It will generate the type of rotation, the combination as well as the grade of the rotation. All this is available instantaneously.

There have been two studies completed and published correlating the foot patterns with mandibular rotations which have been ascertained from the face. The second study also used data from the Staticus to compare and co-relate actual digital foot loads and the variation in the loads based on the foot patterns. A third study is currently being undertaken and will soon be completed and published.

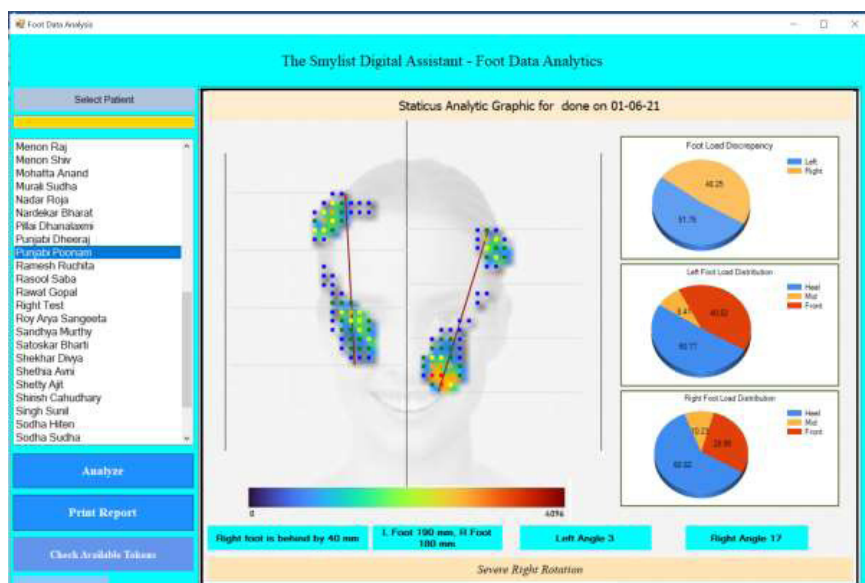


Figure 3 : The analytic display on the computer after data has been captured

CONCLUSIONS

It is definite that the foot will not be put in the mouth at all when the oral health practitioner looks at the feet first and then mouth. The examination and diagnosis will literally be done in reverse using Smylist® concepts. The effect is on the feet while the cause is in the mouth. This cause, properly diagnosed and treated, not only will make the mouth ok, but will eliminate body disorders and balance the body to create a proper and ideal balanced foot pattern and load. More information is available on the following Emails: maria.csillag@smylist.com / ajay.kakar@smylist.com

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