



A Science of Medicine
The Art of Care

Changes in Colours of the Body – the Determinants of Disease

Dr Linda Mayer and Prof Rashid Bhikha

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In Tibb every organ and part of the body has its own temperament, ranging in degrees of heat, moisture, coldness and dryness, which is appropriate to its own functional requirements. Avicenna stated that “the patient is a manuscript written in some highly complex language which is our business to decipher”.¹

The colours of the body and its parts indicate the status of one’s health over time, and are markers of infection and inflammation, as well as determinants of disease. The colours are reflected in the skin and its appendages, eyes, tongue and face, as well as in the urine, stools, discharges and sputum. Any changes to the normal colours signify a deviation in the degrees of heat, moisture, coldness and dryness, revealing underlying diseases. A lack of tissue salts in the body also displays discolouration in specific areas of the face, which is an indication of which tissue salt is required for the respective deficiency.

The Colours of the Skin (greater than person’s norm)

Brown skin

A brown colour on the skin may be caused by increased melanin from sun exposure; pregnancy (melasma), and Addison’s disease. In Tibb a brown body (different to norm) indicates a hot temperament, whereas a dark brown body indicates an extremely cold temperament, because the Sanguinous humour is dominant, and there is deficient coagulability of the blood, causing it to darken, and simultaneously changing the colour of the skin.^{1 (p. 270)}

A melanoma tumour of the skin may be brown or black in colour and it originates in the pigment-producing melanocytes in the basal layer of the epidermis. It is caused mainly by intense, occasional UV exposure (frequently leading to sunburn), especially in those who are genetically predisposed to the disease.²

Lead, black, dark or green skin

Avicenna described that a tumour swelling is a manifestation of the 'boiling' of the black bile at its junction with the organ, and that the crablike tracks of the cancerous tumour tends toward **blackness, green** and heat.^{3 (p306-307)}

In Tibb, a **lead** colour is a sign of coldness and moistness with some black bile, as it is white with a little green; the white indicates phlegm (moist temperament), and the green indicates congealed blood with blackness that is mixed with phlegm, and gives it the **green** colour.^{4 (p. 189)}

In Tibb, a dry and **dark** skin and complexion, with patches of pigmentation, chronic indolent ulcers, or spleen diseases, may be a sign of an excess of black bile.^{1 (p281)}

Blue and purple skin (cyanosis)

In Tibb a purple colour of the body is a sign of coldness and dryness, as it is a colour that belongs to black bile.^{4 (p. 188)} A purple colour may also signify other physiological changes in the body, such as: increased deoxyhaemoglobin, as in hypoxia; peripheral cyanosis, from anxiety, or a cold environment; central cyanosis, from heart or lung disease; and abnormal haemoglobin, as in Methemoglobinaemia; sulfhaemoblobinaemia.⁵

Eggplant Colour of the skin

Eggplant is a dark purple or brownish colour. In Tibb the colour of eggplant of the body indicates a cold and dry temperament. The heat is such as follows upon pure atrabillious humour.^{1 (P. 270)}

Red skin

In Tibb, a red colour of the skin and tongue are indicative of an abundance of blood and heat. These are signs of a predominance of the Sanguinous humour, which are accompanied by feelings of heaviness in the body, especially around the eyes, head and temples, as well as tiredness and a tendency to oversleep.^{4 (p.188, 280)} It may also indicate an increased visibility of oxyhaemoglobin from dilated superficial blood vessels or increased blood flow in skin, or from fever, blushing, alcohol intake, or local inflammation.⁵ Frostbite initially appears dark red in colour on the hands and face after exposure to sub-zero temperatures, from a decrease of oxygen to the skin, advancing to black in the advanced stages.^{3 (p.310)}

Yellow skin

In Tibb a yellow colour of the eyes and complexion indicate a hot temperament which is accompanied by scarcity of blood, and increase of Bilious humour.^{4 (p.188), 1 (p. 270)} One disease can result in changes of colours to two organs; for example, the tongue may

become white and the face becomes dark, as in jaundice, which is indicative of a strong, burning yellow bile.^{4 (p. 189)}

A predominance of yellow bile includes nausea with bilious vomiting of yellowish or green colour, diarrhoea and tingling of the skin. There may be burning and irritation of the skin after hot baths or exposure to the sun.^{1 (p280)} It may also signify an increase in bilirubin, as in jaundice, liver disease, or haemolysis of red blood cells). An excess of carotene intake from yellow fruit and vegetables, as in carotenaemia, will also give the skin a yellow appearance.

Pale/chalky or ivory skin

In Tibb, a pallor colour of the skin indicates a cold temperament and the accompanying feature is lack of blood. A predominance of the Phlegmatic humour indicates an excess cold and moist skin, with an increase in saliva, which is thick.^{1 (p280)} A chalky or ivory white colour skin indicates a cold temperament where the serous humour is in excess (phlegmatic cold); the latter which also indicates that the Bilious humour is scanty.^{1 (p. 270), 4 (p.189)}

A pale colour of the skin may signify other pathologies, such as: decreased melanin, as in albinism, vitiligo, or tinea versicolor. Oedema can mask pigments, such as in nephrotic syndrome. A decreased visibility of oxyhaemoglobin may occur from a decreased blood flow to the skin, as in syncope or shock; or a decreased amount of oxyhaemoglobin, as in anaemia.⁵

Changes in the colour of the eyes indicates a specific disorder, as follows: Yellowish-white indicates a disorder of the liver; yellowish-black indicates a disorder of the spleen, and yellowish-green indicates a probability of piles.¹

The Colours of Urine

Urine is 95 per cent water and five per cent urea, uric acid, minerals, salts, enzymes, and various substances that would cause problems if allowed to accumulate in the body. Normal urine is clear and has a straw yellow colour, caused by a bile pigment called urochrome,⁹ which can also become a dark amber colour, depending on the concentration of solutes in the urine.

The kidneys filter any toxins and soluble waste products, as well as excess of water, proteins, and bacteria etc. out of the blood. Any changes in the colour of the urine may indicate an underlying pathological process, or it may reflect a benign consequence of the ingestion of certain foods and drugs.

In Tibb, the clearer the urine, the more digestion is taking place. Thinness of the urine may indicate either indigestion or obstruction; whereas denseness of urine indicates that the humours have matured and that Physis is preparing for the body to rid itself of the toxins. Dense urine may also indicate that a thick humour is being eliminated and is mixing with the urine.³

Dark urine may be indicative of a healing crisis, or detoxification, where Physis is trying to rid the body of the infection or the pathological process. However, the significance of dark urine depends on the time it occurs in relation to the healing crisis; for example dark urine in the middle of the healing crisis is a good sign, but not if it occurs at the onset or end of a fever.³

Orange, red or bright yellow urine

When the quantity of urine decreases, which may occur in hot weather, decreased fluid consumption, or constipation, the concentration of substances in the urine increases, resulting in a deeper yellow or orange urine colour. In jaundice the colour of the urine is also yellow.¹⁰

In Tibb a saffron, orange or clear reddish yellow colour may indicate an imbalance of the qualities, with too much heat. The stronger the colour, the more bile is mixed with the urine.^{3 (p101)} Dark urine also may indicate fasting/inadequate intake of water.

In jaundice the urine becomes a deep red, almost black in colour, with reddish or dark foam. In Tibb this is a good sign that the body is detoxifying, whereas a white or pale red is a sign that the jaundice is not subsiding.³ Red urine can indicate medical conditions, such as urinary tract infections, haemolytic anaemia and porphyria.

Certain foods can change the colour of urine to red or pink, such as beets, blackberries and rhubarb, and an excess of carotene may give the urine (and the skin) an orange colour. Kidney stones can cause tiny ruptures in the tissues of the urinary tract as they pass through the ureters and into the bladder. This will cause visible blood in the urine. The presence of blood in the urine is the result of damage to the lining of the ureter or bladder, or tissue damage inside the kidney.¹⁰

Certain medications, such as ibuprofen, warfarin and chloroquine, can also discolour the urine orange, as well as pyridium, the latter which is used to treat urinary infections, and which may give a falsely positive reading on the dipstick test. Vitamin C and riboflavin may also turn the urine dark yellow to orange.¹¹

Blue or green urine

In Tibb a light green colour may indicate a lack of internal combustion; or an internal spasm if observed directly after great physical labour. The greenish colour of rusted brass is a sign of impending death, because of complete extinguishing of the innate heat.³

Medical conditions, such as porphyria, pseudomonas UTI, and herbicide ingestion can cause the urine to become a blue or green colour, as well as certain medications, such as amitriptyline, indomethacin and clorets breath mints.

White urine (albinuria)

In Tibb, cloudy urine indicates a loss of vitality. Whiteness in urine indicates that there is an imbalance of the qualities, with too much coldness. Urine is often white at the beginning of a disease, gradually becoming darker as the disease progresses. White urine is an inability of bile to mix with the urine, or there is an overabundance of phlegm mixed with the urine.³
(p.101)

Variations of white have specific meanings in Tibb, for example: thin white urine may indicate that the pathological matter has not yet ripened in a chronic disease; however in old age, thin white urine may be the result of a weakening of the life force. Pus in the urine is usually associated with the bursting of an abscess; however, in a person who never exercises, Physis is trying to purge the body of morbid matter, which is not actual pus.³

A pale urine also signifies in Tibb a predominance of the Phlegmatic humour, with an excess of coldness and moisture in the body.^{1 (p280)}

White urine can result from medical conditions such as pyuria, from a urinary tract infection, lipiduria and proteinuria. Mineral sediments can also cause whitish coloured urine, as in hypercalciuria and phosphaturia. Foul smelling and cloudy urine is a common symptom for cystitis (bladder infection) and pyelitis (inflammation of the kidney pelvis).¹⁰

Brown urine

Certain medical conditions can cause a brown colour in the urine such as haemolytic anaemia, porphyria and metastatic melanoma; medications such as metronidazole and nitrofurantoin; and certain foods such as fava beans and rhubarb.

Black urine

Black urine usually refers to the intense density of red. In Tibb this signifies that there is a high oxidation, or burning of the humours, resulting in internal cold, imminent death, a healing crisis (detoxification), or evacuation of an excess of black bile.³

Metastatic melanoma and porphyria can cause the urine to have a black appearance. Medications such as iron, L-dopa, senna, and sorbitol may also discolour the urine.¹²

The Colours of Stools

The colour of stools are normally brown, but which can also range in colour from light yellow to almost black, depending on the amount of bile present in the stool. Bile is formed by the liver and stored in the gallbladder, and which is secreted into the intestine to facilitate the digestion of food.

The quantity and consistency of the stool determines the underlying health of an individual. The quantity of a stool should not be more than the amount of food consumed; In Tibb, if the quantity is greater, there is an excess of the humours; whereas if the quantity is less, this either suggests a deficiency of the humours, retention of food in the colon, or a weakness of the expulsive power.^{1 (p. 345)} A moist consistency of a stool indicates a poor digestive process or obstruction, from an insufficient amount of water which is absorbed from the food.^{3 (p 106)}

The changes in the colour of stools are also influenced by certain medications as well as ingestion of certain foods, which indicates that the digestion is incomplete. Any sudden changes to the stool colour, which persist, may indicate an underlying medical condition. The following are some examples of changes to the normal colour of stools:

White stool

This indicates that there is an obstruction of the passages which supply bile, as in jaundice. If there is an accompanying odour, this either means that an inflammatory mass has ruptured, or, from a Tibb perspective, this may occur in a healthy person who does not exercise, as Physis is trying to purge the body of morbid matter.³

Maroon or red stool

If bleeding occurs from the lower parts of the intestines there is in less contact of blood with the digestive enzymes. This is due to the short distance from the site of bleeding to the rectum. Large amounts of blood within the intestines speed up transit of stool resulting in less time for the changes to take place. Some examples include gastrointestinal bleeding and a gastric ulcer. Red vegetables, such as beets and red food dyes also can turn the stool colour red.¹³

Grey or clay-coloured stool

A grey, pale coloured stool may indicate the absence or reduced amount of bile over a period of time. This may occur as a result of a biliary obstruction from a tumour or gallstone in the biliary duct or pancreas.¹³

Black tarry, sticky stools

In Tibb, a dark or black stool may occur as a result of high oxidation, or burning of the humours. This may indicate a more advanced disease process, caused by an imbalance of black bile, and which may give the stool a silvery sheen. Impending death is usually accompanied by the passing of a pure black stool.³

Some medications, such as iron or bismuth-containing medications, can cause the stool to become black, but not sticky, and with no odour. This is a normal occurrence, which does not cause any foul smell, and it does not have a sticky, tarry consistency. If the colour of the stool is black and tarry, because of a bleeding ulcer, then aspirin should be avoided, as this causes the blood to become thinner. A black stool may result from bleeding in the stomach or the upper part of the small intestine. The stool is foul-smelling and changes in its colour and consistency occurs because of chemical reactions of the blood within the intestine from digestive enzymes. A black stool may also indicate liver disease or an intestinal ulcer.¹³

Yellow stool

In Tibb, if a very yellow stool occurs in the early stages of a disease, this may indicate an imbalance of the yellow bile humour; however if this occurs at the end of a disease, this is a normal process whereby Physis is purging the body of toxic material.³

The presence of undigested fat in the stool results in a yellow colour, such as in pancreatitis, from the reduced supply of digestive enzymes to the intestines. Pancreatic cancer results in the obstruction of the pancreatic duct which carries the enzymes to the intestines. This causes the constituents of proteins and carbohydrates, especially the fat, to remain undigested and unabsorbed, and the stool containing the undigested fat may be yellowish in colour, greasy, and foul smelling.¹³ Avoiding alcohol can be a preventive measure against yellow stools as a result of undigested fat in the stool from pancreatic disease.

Green Stool

The stool becomes a green colour if it passes through the intestines very quickly, as in diarrhoea, where there may be little time for bilirubin to undergo its usual chemical changes.¹³ In Tibb, a green stool may indicate a deficiency of innate heat. The colour is due to the verdigris-green type of bile.^{1 (p. 347)} Bile is formed by the liver and stored in the gallbladder, and which is secreted into the intestine to facilitate the digestion of food. When red blood cells are destroyed naturally in the body, the haemoglobin, a protein inside the red blood cells that carries oxygen, is modified in the liver, and its by-product, bilirubin, is secreted as bile. When bile is secreted from the gallbladder into the intestine, its colour is dark green. As bile travels through the intestines, it can undergo further changes in chemicals, and thereby altering its colour. This is dependent on the length of time it takes for the bile to travel through the intestines; the shorter the time, the closer its resemblance to the colour of green.¹³

The Colours of Discharges

The colour of discharges is an indication that the body is undergoing some process of infection, which alerts the individual to seek medical advice. The following are some examples:

Clear discharges indicate a clearing of the body of the first stage of any cold, flu, allergy or hormonal condition.

White discharges indicate a sign of mucous congestion. In Tibb, this can be explained by an excess of Phlegmatic humour from an increase in cold and moist qualities.

Yellow discharges indicate a change in the normal secretions of the body. The darker the yellow colour, the worse the condition. In Tibb, this may occur from an excess of the Bilious humour from an increase in hot and dry qualities.

Green discharges indicate signs of infection.

Brown discharges indicate serious signs of infection.

Black discharges indicate the worst condition, which is a sign of dried blood. Urgent medical attention is required. In Tibb, this occurs from an imbalance of black bile.⁶

The Colours of Sputum

Sputum or phlegm is matter ejected from the respiratory tract through the mouth, and its colour is often an indication of the type of respiratory disease. Phlegm refers to congealed mucous that is secreted by the mucous membranes of the respiratory tract, from an excess of Phlegmatic humour. The term phlegm is derived from the Greek word 'phlegma' which means inflammation. Phlegm is comprised of glycoproteins and water and it may contain bacteria, viruses, dirt, components of blood, and dead inflammatory cells. Phlegm traps those unwanted invaders, which is then expelled from the body by coughing.¹⁴

The colour of sputum plays an important role in the disease concepts for acute cough. A research study was done of sputum samples obtained from 241 patients suffering from an episode of acute coughing. This study revealed that there is likelihood that yellowish or greenish sputum will be found among people with a bacterial infection, compared with those without this infection.¹⁵ The following are examples of the colours of sputum:

Clear white sputum

Clear sputum is considered to be the normal colour; however an excess production of sputum indicates the possibility of pulmonary oedema (clear, white or pink frothy), asthma (thick white to yellow), viral respiratory tract infections (clear to white in acute cases), or chronic bronchitis (clear to grey).

Yellow sputum

Yellow coloured sputum is often present in chronic inflammation, allergies and infectious diseases. This results from the presence of white blood cells, particularly neutrophils and eosinophils. Examples include: asthma (thick white to yellow), acute bronchitis (white to yellow), and acute pneumonia (white to yellow).¹⁶

Green sputum

Green sputum may indicate a long standing, and possibly a chronic infection, with a greenish purulent discharge, as opposed to a chronic non-infectious inflammatory conditions, which will present with a greenish mucoïd discharge. The green colour is caused by the breakdown of neutrophils and the release of enzymes that is present within these cells. Examples

include: bronchiectasis and cystic fibrosis (green), pneumonia (white, yellow or green), Lung abscess (green), or chronic bronchitis (clear, grey to green).

Pink and rust-coloured sputum

Red sputum is an indication of whole blood, which may completely discolour the sputum or it may appear as spots or streaks. Example include: pneumococcal pneumonia (rusty red), tuberculosis (bright red streaks progressing to fully red sputum in haemoptysis); pulmonary embolism (bright red blood in an acute episode); pulmonary oedema (pink and frothy), or klebsiella pneumonia (red currant jelly).

Brown or black sputum

Brown or black coloured sputum is an indication of 'old blood', resulting from the release of haemosiderin, an iron containing pigment, from the disintegration of erythrocytes.

Examples include: chronic bronchitis (green, yellow or brown), lung cancer (red to brown to black), chronic pneumonia (white, yellow, green to brown), and tuberculosis (red to brown or black), or amoebic liver abscess (black).¹⁶

Summary

The colour of the body, both externally and internally, indicates the state of health or disease over time, which may be visible on the skin and in discharges, stools, urine, sputum, organs and the face. Certain foods and medication may also cause changes to the normal colour.

From a Tibb perspective, a disease is any deviation from, or interruption of, the normal structure or function of a part, organ, or system of the body. This is caused by an excess of humours, which exists either as an overabundance of the quantity or quality of the humour. Chronic illnesses result if this overabundance of excess humours exists over a prolonged period of time.

The 'inborn intelligence of health,' or **Physis**, maintains harmony and the dynamic optimum functioning of the body, which acts to heal the body when it is sick, restore it when it is depleted, and to develop and thrive when supplied with suitable nourishment. Making the right choices of lifestyle factors for the unique temperament of an individual, as well as moderation and balance in all aspects of life, is key to the maintenance and restoration of health and wellbeing.

References

1. Bakhtiar, L. (1999). *The Canon of Medicine – Avicenna*. USA: Great Books of the Islamic World, Inc.

2. Skin Cancer Foundation, (2014). *Melanoma*. [Online]. Available <http://www.skincancer.org/skin-cancer-information/melanoma>
3. Chishti, G.M. (1991). *The Traditional Healer's Handbook. A Classical Guide to the Medicine of Avicenna*. USA: Healing Arts Press.
4. Abu-Asab, M.; Amri, H., and Micozzi, M.S. (2013). *Avicenna's Medicine. A New Translation of the 11th-Century Canon with Practical Applications for Integrative Health Care*. USA: Healing Arts Press.
5. Bickley, L. (2013). *Bates' Pocket Guide to Physical Examination and History Taking*. P 86. Seventh Edition. China: Lippincott, Williams & Wilkins. [Online]. Available http://www.amazon.com/Pocket-Physical-Examination-History-Taking/dp/1451173229/ref=sr_1_fkmr1_3?s=books&ie=UTF8&qid=1387960947&sr=1-3-fkmr1&keywords=NLP+practitioner++cards
6. Card, D.R. (2004). *Facial Diagnosis of Cell Salt Deficiencies*. China: Kalindi Press.
7. Creightmore, R. (2012). *Geopathic Stress*. Land & Spirit. [Online]. Available http://www.landandspirit.net/html/body_geopathic_stress.html
8. Schoenfeld, E.F. (2009). *Second Chance. Regain Your Health With Tissue Salts*. SA: Graysonian Press.
9. Dr. Mercola. (2013). *What You Can Learn About Your Health by Analysing the Colour and Smell of Your Urine*. [Online]. Available <http://articles.mercola.com/sites/articles/archive/2013/05/30/urine.aspx>
10. Ayurvedisch Gezondheidscentrum Nederland. (2014). *Ayurveda and the kidneys*. [Online]. Available http://agnayurveda.com/nl/ayurveda_blog/ayurveda_and_the_kidneys/
11. Terris, M.K. (2014). *The significance of abnormal urine colour*. [Online]. Available http://urology.stanford.edu/about/articles/abnormal_urine.html
12. Ryan, D., Aycock, M.D., Dara, M.S. and Kass, M.D. (2012). *Abnormal Urine Colour*. South Med J. 2012;105(1):43-47. [Online]. Available <http://www.medscape.com/viewarticle/756373>
13. Nabili, S.T. (2013). *Stool Colour Changes (Black, Red, Maroon, Green, Yellow, Grey, Tarry, Sticky)*. [Online]. Available http://www.emedicinehealth.com/stool_color_changes/article_em.htm#stool_color_overview
14. Baxamusa, B.N. (2013). *Phlegm Colour Meaning*. [Online]. Available <http://www.buzzle.com/articles/phlegm-color-meaning.html>
15. Altiner, A., Wilm, S., and Scherer M. (2009). *Sputum colour for diagnosis of a bacterial infection in patients with acute cough*. Scand J Prim Health Care. 2009; 27(2): 70–73. [Online]. Available <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3410464/>
16. Ahmed, B. (2011). *Meaning of Different Sputum Colours*. [Online]. Available <http://www.medicalopedia.org/1175/meaning-of-different-sputum-colors/>

