2020-S-0002
Physical Stability of Facial Features of Adults

Facial Identification Subcommittee
Digital/Multimedia Scientific Area Committee
Organization of Scientific Area Committees (OSAC) for Forensic Science

Draft OSAC Proposed Standard

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Facial Identification Subcommittee
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Purpose

The purpose of this document is to describe the relative physical stability of facial features of adults when assessing the observed component characteristics within a single living subject as an aid to the facial comparison practitioner.

Scope

This document is meant to be used in conjunction with [ASTM E3149-18] for Morphological Analysis

This document refers only to images appearing to be adult (i.e., post-pubescent) subjects and does not address the stability of features in children due to rapid developmental changes. This document does not cover the entire comparison process. Other documents (standards/guidelines/best practices) should be referenced regarding the effects of imaging conditions (e.g., illumination, pose, resolution) have on feature appearance, comparison and evaluation strategies, and opinion scales.

Limitations

The stability assessments provided in this document are primarily a consensus opinion of experienced practitioners informed by discussions with medical and academic professionals, and the limited scientific literature available (as noted in the specific feature tables). As more research is published, the stability assessments may be updated.

Introduction

Over time, images of the same person may contain apparent differences due to anticipated changes (e.g., aging and expression) or unanticipated changes (e.g., fluctuations in weight, health, or effects of substance use). Other visible differences may be due to intentional alterations to appearance. While some changes, such as expression and weight gain/loss, may be transient, others may result in a permanent change in appearance. When conducting a forensic facial one-to-one comparison of images captured of the same person at different time periods, the practitioner must consider these potential variances when forming an opinion. This document is intended to bring these concerns to the attention of the practitioner, ensure reliability of analysis, and provide a pathway for the development of further standards in this area.

Factors Affecting Physical Stability of Facial Components

The following factors affect the physical stability of facial features and their components on an individual face (regardless of imaging conditions), listed in no particular order: expression, aging (short and long term), marked weight change, change in health, and intentional alteration. For each factor, stability is assessed for that factor taken in isolation. In other words, under "Expression", the stability is ONLY assessed as a function of changes in expression. However, multiple factors can act concurrently on the same components which the practitioner will have to take into consideration. Not all factors will affect components at the same time or in the same way and some components may not be affected at all. The physical stability of features under each of these factors is presented below.

Expression

This factor refers to any deviation from a relaxed face. A relaxed face usually includes eyes open and a closed mouth; however, there are individuals for whom the relaxed face includes an open mouth. A neutral expression ((non-smiling) with both eyes open normally (i.e., not wide-open),

and mouth closed (unless medical condition precludes it[1])) is generally the standard by which controlled captured images (passport, ID etc.) are collected. If an individual is depicted in two images under similar imaging conditions with no change in expression or any other factor, then all features should appear consistent.

Time-related Changes

This factor refers to facial variations that occur as a person ages over time. The scope of time-related changes considers (without limitation) exposure to the elements (e.g., sun, wind), dental changes, skin elasticity, hair loss, hyperpigmentation or hypopigmentation that may occur during this progression. For the purposes of this document, time-related changes are discussed in two categories:

- **Short term** refers to periods of five (5) years or less.
- **Long term** refers to periods in excess of five (5) years.

The practitioner should be aware that these time frames are general and may need to be adjusted as the practitioner considers the differing rates of change applicable to the person's gender and ethnicity. If an individual is depicted in two contemporaneous images under similar imaging conditions with no other factors changed, then all features would be expected to appear consistent.

Marked Weight Change

This factor refers to the variations to the face that occur as a function of observable weight loss or gain. The specific details of these variations will differ from person to person. If an individual is depicted in two images under similar imaging conditions with a negligible change in weight or other factors, then all features would be expected to appear consistent.

Changes in Health

This factor refers to variations to the face that occur as a function of changes in health. A comprehensive delineation of the effect of all potential health conditions is beyond the scope of this document. If an individual is depicted in two images under similar imaging conditions with no substantial change in health or other factors, then all features would be expected to appear consistent.

Note on Trauma, Inflammation, Tumors, and Substance Use: Trauma to the head, inflammation (e.g., due to infection or allergic reaction), or tumors can alter any facial feature or portion of the face temporarily or permanently. As a result, the stability of all facial features affected by trauma, inflammation, or tumors is low and will not be delineated in the tables below. Additionally, substance use depends on multiple different factors to include, but not limited to, the body chemistry of the person, the substance being used, and the amount of use. Therefore, substance use will not be delineated in the tables below.

Intentional Alteration

This factor refers to variations to the face that occur as a function of deliberate modifications. These variations can be temporary or permanent. Changes may result from visible modifications to the skin surface such as facial hair, tattoos, piercings*, or cosmetics/makeup. Changes may also result from modifications below the skin surface due to cosmetic, dental or reconstructive

[1] ANSI/NIST-ITL 1-2011, August 22, 2016

procedures. Modifications due to cultural practices can also affect the appearance of facial features. If an individual is depicted in two images under similar imaging conditions with no intentional alterations or changes in other factors, then all features would be expected to appear consistent. Intentional alterations are component characteristics whose stability must also be considered.

**Note on Piercings:* The presence of piercings may have a widely variable impact on most component characteristics.

Stability Tables

The tables below define component characteristics as having either "High", "Medium" or "Low" stability in the same person under the factor in question. The potential for change in the characteristic descriptors will determine this stability. If a feature with low stability is relied upon in a comparison, there is a higher risk of the comparison results being incorrect. The risk of inaccuracy increases as more low stability features are relied upon.

- **High stability (H)** features exhibit little to no change.
- **Medium stability (M)** features may exhibit moderate changes.
- **Low stability (L)** features may exhibit substantial changes.

Note: Each table is accompanied by text describing conditions under which each factor affects the stability of the corresponding component characteristic.

Skin						
Skin appearance is extremely variable. Skin appearance may be affected by emotion, hormone levels, temperature, fatigue, hydration, etc. Changes in health and intentional alterations (e.g., make-up, tanning, tattoos, skin bleaching, and other cosmetic procedures) may cause greater variation in skin appearance.						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Overall Skin Appearance	M	M	L	M	L	L

Face/Head Outline
The shape of the cranial vault does not change substantially in adulthood under normal conditions, but weight fluctuation or subdermal implants may give the appearance of change. Changes in weight or expression affect the shape of the face with the latter dominated by movement of the lower jaw. The stability of the face shape over long periods of time may also depend on tooth and related bone loss. Changes in health and intentional alterations (e.g., disease, maxillofacial surgery, orthodontic procedures, and cosmetic procedures) may cause greater variation in the overall shape of the face.

Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Shape of Cranial Vault	H	H	H	M	H	M
Overall Shape of Face	L	H	M	L	L	L

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Face/Head Composition						
While the proportions of the features of the face are less stable, the position of the eyes, ears and nose relative to each other remains stable under most conditions. Expressions can affect the proportions of the facial features with the greatest effect occurring with movement of the lower jaw and mouth. The stability of the proportions/position of features over long periods of time may also depend on tooth and related bone loss. Changes in health and intentional alterations (e.g., disease, maxillofacial surgery, orthodontic procedures, and cosmetic procedures) may cause greater variation in the proportions/position of features on the face.						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Proportions/ Position of Features on Face	L	H	M	M	L	L

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Hair						
Both women and men may exhibit hair loss or other changes to the hairline and baldness pattern.						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Hair	H	L	L	H	L	L
Forehead Hairline	H	L	L	H	L	L
Hairline Right Side Hairline Left Side	H	L	L	H	L	L
Cranial baldness pattern	H	L	L	H	L	L

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Forehead
Both the forehead and the brow ridges are defined by the frontal bone. Forehead shape is not affected by hairline modifications, nor are brow ridges affected by eyebrow growth or recession. Brow ridge prominence can be altered in both men and women due to prolonged changes in hormone levels (e.g., menopause, human growth hormone) or surgical procedures.

Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Forehead Shape	H	H	M	M	H	L
Brow Ridges	H	H	M	M	M	L

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Eyebrow						
Eyebrows have many characteristic descriptors which can be highly variable under various factors. With the exception of expression, which can change the shape, position and asymmetry of the eyebrows, most variability is related to changes in the hair details or alterations (e.g., grooming, tattoos). Some health conditions such as facial palsy (e.g., from stroke or viral condition) may create asymmetry to the appearance of the eyebrows.						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Right Eyebrow Left Eyebrow	L	H	L	H	L	L
Asymmetry between Right and Left Eyebrows	L	H	H	H	L	L

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Eyes						
Intercanthal distance does not change with the exception of trauma. Some component characteristics of the eye are affected by expression while others are not. Changes to the sclera can occur over short periods of time due to causes such as exposure to sun, wind, and other irritants. Time-related changes over the long term and marked weight change primarily affect the soft tissues. Examples include: eyelid drooping, orbital fat variations, corneal clouding. Changes in health can affect all other component characteristics of the eyes, and some conditions such as facial palsy (e.g., from stroke or viral condition) may create asymmetry to the appearance of the eyes. Intentional alterations to the eye include contact lenses, cosmetics, cosmetic procedures, tattoos, piercings, prostheses, etc.[i]						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Intercanthal Distance	H	H	H	H	H	H
Interpupillary Distance (IPD)	M	H	H	H	M	L
Right Eye Fissure Opening (Outline) Left Eye Fissure Opening (Outline)	L	H	M	M	L	M
Right Upper Eyelid (including lashes) Left Upper Eyelid (including lashes)	L	H	M	M	L	L

Right Lower Eyelid (including lashes) Left Lower Eyelid (including lashes)	L	H	L	M	L	L
Right Eyeball Prominence Left Eyeball Prominence	H	H	H	M	L	M
Right Eye Sclera Left Eye Sclera	H	M	M	H	L	L
Right Iris Left Iris	L	H	M	H	L	L
Right Eye Medial Canthus Left Eye Medial Canthus	H	H	H	H	L	M
Right Eye Lateral Canthus Left Eye Lateral Canthus	H	H	M	H	L	M
Asymmetry Between Right and Left Eyes	H	H	H	H	L	M

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Cheeks						
The apparent prominence of the cheekbones varies in relation to changes in weight, health (e.g., stroke, facial palsy, dental changes) and intentional alteration (e.g., cosmetics or cosmetic procedures). With aging (senescence) the cheekbone may appear more prominent due to decreased soft tissue and muscle mass. The cheek is a flexible soft tissue structure which can be affected by all of the factors. The buccal fat pad moves inferiorly down the cheek during middle-age and this creates a flatter cheek shape with less prominent cheekbones. Intentional alterations include cosmetics, surgical implants and fillers.						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Right Cheekbone Left Cheekbone	H	H	M	L	L	L
Right Cheek Shape (soft tissue) Left Cheek Shape (soft tissue)	L	M	L	L	L	L

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Nose
The nose is a stable feature over the short term under normal conditions. All characteristic components, except the nasal root, can change with expression, and all components can be changed with intentional alterations (e.g., piercings, surgery). Over the long term, the soft tissues (including the cartilage) of the nose change in length and shape. Under marked weight changes, only the root and columella remain stable, and under health changes, only the root and body remain stable. The other characteristic components of the nose can be affected by

disease (e.g., leprosy, gout), viral conditions (e.g., colds, sinusitis), and growths (e.g., polyps). The attachment of the alae to the upper lip does not change with the exception of surgery, trauma, or tumor.[ii]						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Nasal Outline (Profile/Front view)	L	H	M	M	M	L
Nasal Root (bridge)	H	H	H	H	H	L
Nasal Body	M	H	H	M	H	L
Nasal Tip	L	H	L	M	M	L
Nasal Base	L	H	M	M	M	L
Nasal Base: Alae (Wings of nose)	L	H	M	M	M	L
Nasal Base: Nostrils (Nasal Openings)	L	H	M	M	M	L
Nasal Base: Columella (Soft tissue between Nostrils)	M	H	M	H	M	L

Ears						
The ear is a very stable feature. Ear position alone can change with expression, but the ear configuration remains stable. Over the long term, the ear changes in proportions, although lengthening of the lobule dominates these changes. Marked weight changes can affect the prominence and protrusion of the ear, as well as the fat content of the lobe. Other than trauma (e.g., cauliflower ear), inflammation and tumors, health changes rarely affect the characteristic components of the ears, except in cases of unusual disease (e.g., leprosy or cysts). [iii]						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Asymmetry Between Left and Right Ears	M	H	H	H	H	L
Right Ear Protrusion Left Ear Protrusion	M	H	M	L	H	L
Overall Right Ear Overall Left Ear	M	H	M	M	H	L
Right Ear Helix-Superior, Inferior (tail) Left Ear Helix-Superior, Inferior (tail)	H	H	H	H	H	L
Right Ear Tubercles (Auricular Tubercle) Left Ear Tubercles (Auricular Tubercle)	H	H	H	H	H	L
Right Ear Antihelix	H	H	H	H	H	L

Left Ear Antihelix						
Right Ear Crura of Antihelix (Superior, Inferior) Left Ear Crura of Antihelix (Superior, Inferior)	H	H	H	H	H	M
Right Ear Triangular fossa Left Ear Triangular fossa	H	H	H	H	H	M
Right Ear Crus of Helix Left Ear Crus of Helix	H	H	H	H	H	M
Right Ear Scaphoid Fossa Left Ear Scaphoid Fossa	H	H	H	H	H	M
Right Ear Concha (Superior, Inferior) Left Ear Concha (Superior, Inferior)	H	H	H	H	H	M
Right Ear Tragus Left Ear Tragus	H	H	H	H	H	L
Right Ear Antitragus Left Ear Antitragus	H	H	H	H	H	L
Right Ear Intertragic/ Intertragal Notch Left Ear Intertragic/ Intertragal Notch	H	H	H	H	H	M
Right Ear Anterior Knob Left Ear Anterior Knob	H	H	H	H	H	L
Right Ear Anterior Notch Left Ear Anterior Notch	H	H	H	H	H	M
Right Ear Posterior Auricular Furrow Left Ear Posterior Auricular Furrow	H	H	H	H	H	M
Right Ear Lobule (Lobe) Left Ear Lobule (Lobe)	H	H	M	M	H	L
Ear Abnormalities	H	H	M	H	H	L

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Mouth
The mouth is the facial feature that changes the most under expression. Over a short period of time, the component characteristics of the mouth are stable, with the exception of tooth loss and tooth color (e.g., coffee stains). Over the long term the lips become thinner and the position of the mouth fissure may change due to this and any dental changes. Health changes will affect the component characteristics of the mouth in a variety of ways, such as lip shape (e.g., herpes simplex virus), asymmetry (e.g., stroke and palsy), lip creases (e.g.,

dehydration) or lip tone. Intentional alterations include tattoos, piercings, fillers and cosmetics. Mouth abnormalities, such as cleft lip and palate, are frequently corrected through cosmetic procedures which results in a different appearance.[iv]						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Philtrum	L	H	L	M	M	L
Overall Mouth	L	H	L	M	M	L
Upper Lip	L	H	L	M	M	L
Lower Lip	L	H	L	M	M	L
Lip Fissure (Opening between lips)	L	M	L	M	M	L
Mouth Asymmetry	L	H	H	H	M	L
Overall Dental Occlusion (Contact between Upper and Lower Teeth)	L	M	M	H	M	L
Gnathism (apparent convexity or concavity of the mouth complex, related to the relative projection of the upper and/or lower teeth)	H	H	M	M	M	L
Characteristic Detail of Teeth	H	H	M	H	M	L
Mouth Abnormalities	H	H	H	H	M	L

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Chin/Jawline						
The chin, jawline and gonial angle are stable features and do not change over the short term. Long term changes relate to tooth and related bone loss, sagging due to loss of skin elasticity and changes in subcutaneous fat distribution with age. Marked weight change will alter the appearance of these features due to subcutaneous fat changes and the effects of gravity on the soft tissues. Health changes, such as hormone levels (e.g., menopause or steroid treatment), behavior (e.g., tooth grinding), disease (e.g., sialosis) and viral conditions (e.g., mumps, mononucleosis) can also affect them. Intentional alterations can include maxillofacial surgery, orthodontic treatment, cosmetic procedures, and facial hair.						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Chin (Profile and Frontal view)	M	H	M	L	M	L
Jawline (from Chin to Gonial Angle)	H	H	M	L	M	L
Gonial Angle (Angle of the jaw)	H	H	M	L	M	L

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Neck

The neck is a stable feature in the short term. Long term there may be changes in muscle mass associated with aging, exercise and hormone levels, and positional changes related to posture. The neck will change shape in relation to expression and marked weight change. Health changes may affect the neck in relation to asymmetry (e.g., torticollis), width (e.g., goiter) and position (e.g., arthritis). Intentional alterations include body building, spinal surgery and postural alteration.
The laryngeal prominence is a stable feature under normal conditions. The laryngeal prominence will change position in relation to expression, posture, and marked weight change will affect the apparent prominence. Health changes may affect the laryngeal prominence (e.g., goiter, mononucleosis) and intentional alterations include hormonal treatment, facial hair and cosmetic procedures.

Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Neck (Overall)	M	H	L	L	L	L
Laryngeal Prominence (Adam's Apple)	M	H	H	L	M	L

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Facial Hair

Following post-pubescent growth, the distribution, symmetry and density of facial hair remain stable in all areas of the face in the short term, however the other characteristic descriptors are highly variable. Long term (e.g., aging, hormone levels) and health changes (e.g., disease, stress) are exhibited for all characteristic descriptors. Expression will change apparent facial hair position at the upper and lower lip but remain stable on the sides and neck. Marked weight change will affect the apparent position of facial hair. Intentional alterations include grooming, cosmetic procedures, hormonal treatment and prostheses.

Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Facial Hair Above Upper Lip Facial Hair Below Lower Lip	L	H	L	M	L	L
Facial Hair on Right Side Facial Hair on Left Side	M	H	L	M	L	L
Facial Hair on Neck, below Chin/Jawline	H	H	L	M	L	L

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Facial Lines

All facial creases become more defined over time and the number of wrinkles will increase over time. Wrinkles are a skin aging response in relation to muscle action and decreased skin elasticity and will align perpendicular to the muscle fiber action. Some creases are related to anatomical structure, such as a bifid nasal tip, cleft chin and nasolabial folds. Creases and wrinkles are stable under normal conditions, although their prominence can be changed by some factors. Expression will make most facial lines more defined and may change their appearance and relative position, although some structural creases (e.g., bifid nasal tip and

cleft chin) are unaffected by expression. Long term changes are related to intrinsic aging, lifestyle (e.g., smoking, drug use, alcohol consumption), stress, sun exposure and dehydration. Marked weight change will affect the position, definition and shape of crease patterns. Health changes (e.g., stroke, palsy) will affect creases and wrinkles in relation to asymmetry, definition, shape and number, and some conditions will obscure crease patterns (e.g., leprosy, goiter, dermatological conditions). Intentional alterations include cosmetic procedures, surgery and cosmetics.

Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Frontal Lines (Forehead Wrinkles)	L	H	M	M	L	L
Vertical Glabellar Line(s)	L	M	M	M	L	L
Nasion Creases	L	H	M	M	L	L
Right Lateral Nasal Lines Left Lateral Nasal Lines	L	H	M	H	M	L
Bifid Nose Crease	H	H	H	M	M	L
Perioribital Lines Right Eye (Crow's Feet/wrinkles) Perioribital Lines Left Eye (Crow's Feet/wrinkles)	L	M	M	M	L	L
Right Superior Palpebral Crease Left Superior Palpebral Crease (Crease between the Upper Eyelid and the Top of the Bony Orbit)	L	H	M	M	L	L
Right Inferior Palpebral Crease Left Inferior Palpebral Crease (Crease between the Lower Eyelid and the Bottom of the Bony Orbit)	L	H	M	M	L	L
Right Infraorbital Creases Left Infraorbital Creases (Creases below the eyes)	L	H	M	M	L	L
Upper Circumoral Striae (Lip Creases) Lower Circumoral Striae (Lip Creases)	L	H	M	M	L	L
Mentolabial sulcus (Horizontal Crease or	L	H	M	M	L	L

Fold between Lower Lip and Chin)						
Right Nasolabial Crease/Folds Left Nasolabial Crease/Folds (Creases or Folds extending from Nose to Corners of Mouth)	L	H	M	M	L	M
Right Marionette Lines Left Marionette Lines	L	H	M	M	L	L
Cleft Chin	H	H	H	M	M	L
Right Buccal Creases/folds Left Buccal Creases/folds (cheek to chin)	L	H	M	M	L	L
Wrinkles on Neck	M	H	L	M	L	L
Other Creases	See below*					

*The stability of other creases depends on their location and orientation as such the stability of a specific crease cannot be generalized in this document.

Scars						
Over time scars may change in relation to visibility but are unaltered by marked weight change or health changes. Expression may change a scar in relation to apparent position and shape. Intentional alterations to conceal scars include cosmetics, facial hair, and tattoos.						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Scars	M	M*	M	H	H	L

*Scars are extremely unstable during the scar maturation phase which can last up to one year once the wound has healed. Following that they are relatively stable features in the short term, under normal conditions.

Facial Marks						
Facial marks are features that may be transient or permanent. Transient marks (e.g., acne or blemishes) are unstable, but other marks (e.g., moles or skin tags) may be stable both short and long term. Expression may change a facial mark in relation to apparent position and shape, depending on its original position, and marks on the lower face (e.g., mouth and lower jaw) will be affected more than those on the upper face (e.g., forehead and nose) by expression. Marks on the ear are unaffected by expression. Health changes (e.g., dermatological conditions, high blood pressure, sun damage) will affect the distribution, number, definition and position of some skin marks, such as freckles, blemishes, or warts. Intentional alteration includes cosmetics, surgery, facial hair, and tattoos.						
Component Characteristic	Expression	Time-related Changes	Time-related Changes	Marked Weight Change	Changes in Health	Intentional Alterations

		(Short Term)	(Long Term)			
Skin Marks	M	L	L	M	L	L

Alterations						
This section refers to the stability of each existing intentional alteration in isolation. Piercings may be unstable over time due to healing and stretching, but the location relative to the pierced feature remains stable even with expression. Weight change may affect the appearance of a piercing. Intentional alterations of piercings include surgery, cosmetics, stretching and additional piercings. Tattoos are stable in the short term but may fade or become blurred over time. Expression may alter the tattoo shape due to skin movement and marked weight change may stretch or crease a tattoo. Health changes may affect tattoos in relation to skin changes (e.g., dermatological conditions). Intentional alterations or concealment of tattoos include laser removal, cosmetics, additional tattooing or facial hair. Because makeup is a transient alteration that is unstable over time and is not particularly affected by expression, weight changes, or changes in health, its stability relative to those factors is not addressed in the table below. Other alterations include but are not limited to surgery, implants, and fillers.						
Component Characteristic	Expression	Time-related Changes (Short Term)	Time-related Changes (Long Term)	Marked Weight Change	Changes in Health	Intentional Alterations
Piercing	H	M	L	M	M	L
Tattoo	M	M	M	M	M	L
Other	See below*					

*The stability of other alterations depends on their location, type, and orientation as such the stability of a specific alteration cannot be generalized in this document.

Conclusion

Individuals conducting one-to-one comparison examinations must consider the stability of the facial features. Failure to consider the stability of facial features may lead to incorrect conclusions. Future documents will discuss the significance of this information during the evaluation process for conclusion determination.

References

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[iii] Chiarella Sforza *, Gaia Grandi, Miriam Binelli, Davide G. Tommasi, Riccardo Rosati, Virgilio F. Ferrario: Age- and sex-related changes in the normal human ear

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