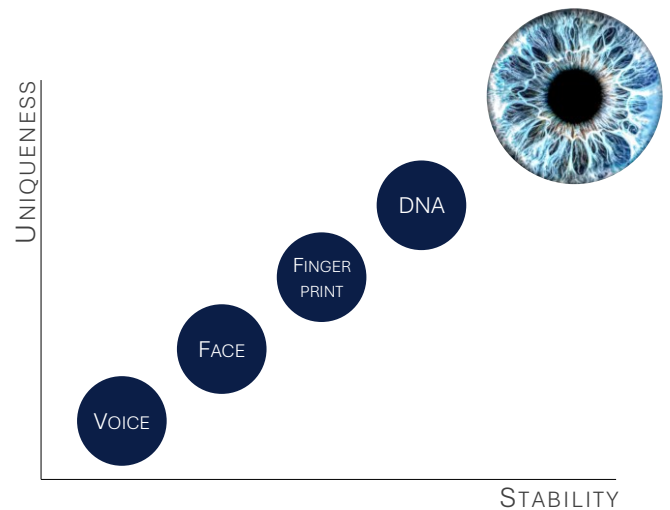




“Iris – not face nor fingerprint – is BEST for intentional identity assurance.”

# Iris vs Face: Biometrics

When identity assurance is based on “something you know” (like passwords, PINs) or “something you have” (like cards, your phone) security is vulnerable because credentials can be lost, stolen, or even given away for fraudulent use. That’s not the case with biometrics (“something you are”) with credentials based on physical attributes inseparable from the owner. That’s why the use of biometric identity assurance is exploding globally, especially for access control, point of sale, and time & attendance applications.



There are over 30 different known biometric markers, but *for intentional and secure identity assurance* the choice is clear: **IRIS – not face, not fingerprint – is the definitive gold standard.** Why? The human iris is simultaneously the most unique and most stable biometric identifier – even more so than DNA. Your face can change drastically with age, weight, condition, and choice (i.e. makeup, veils, glasses, beards, piercings, PPE and masks, etc.), while your iris is fully formed by age three and remains constant for the rest of your life.

Attributes Comparison	Iris	Face	Fingerprint
Information Content	High	Low	Low
Genetics Influence	Independent	Dependent	Influenced
Uniqueness	High	Low	Medium
Age Stability	High	Low	Medium
Environment Stability	High	Medium	Low
Self cleaning	Yes	No	No
Touchless	Yes	Yes	No
Readable at 2m	Yes	Yes	No
Multiples	Yes	No	Yes
Spoof resistant	High	Low	Medium
Private	Yes	No	No

Also, your iris’ structure contains an astounding amount of information (far more than your face or fingerprint). And, because the folds and wrinkles in your irises form randomly (genetics independent), no two irises on the planet are identical - not among family, twins, or even the two on your own face. As such, demographic bias is impossible with iris reading but commonly happens with your face. And iris structure is read without touch, and is unaffected by wear and environmental factors, unlike fingerprint.

# Iris vs Face: Identity Assurance

Iris and face recognition both start by taking a photograph, which is segmented and converted into a non-reversible mathematical form (a template) and then compared against a database of stored users.

Facial features are larger and less complex than iris features – meaning that faces can be recognized more easily from beyond 1m distance. Otherwise, usability and implementation for both are very similar.

However, iris recognition is the clear performance winner thanks to the high uniqueness, stability, and information density of the iris biometric. This enables iris recognition to be orders of magnitude more accurate than face recognition. In fact, Iris on the Move™ can distinguish every person on the planet, making it much better suited for large database N-N matching than any face or fingerprint-based solution.

Furthermore, face recognition often requires “interpretation” while your iris is read directly like a QR code, ensuring that iris recognition better avoids various bias issues that plague face recognition. Iris recognition can be far more convenient for the user because there is no need for a specific pose, neutral expression, or even removal of your mask / PPE, veil / scarf, hat, etc. Even sunglasses and other eye-wear do not hinder iris recognition (transparent in the near IR used for iris image capture). Also, just as you can easily alter the appearance of your face, face recognition is burdened with an easier path to ‘spoofing’ compared with iris recognition. Finally, the ability to capture faces – and not irises – from a non-intentional distance means that iris recognition is considered far more private – aiding in overall security.

The comparison table above clearly shows the advantages of iris recognition. Princeton Identity’s exclusive **Iris on the Move™** technology delivers these benefits with exceptional speed, convenience, and reliability. We believe identity assurance should be based on YOU, NOT YOUR APPEARANCE.

	IRIS	CHARACTERISTICS	FACE
Implementation, Usability	-	TOUCHLESS / FRICTIONLESS	-
		OPTICS REQUIREMENTS	✓
	-	POWER, COMPUTING, & STORAGE	-
	-	ALGORITHMIC COMPLEXITY	-
	-	INSTALLATION COMPLEXITY	-
	-	COST	-
	<b>1m</b>	'EASY' SUBJECT PROXIMITY	<b>5m</b>
	-	SUBJECT MOTION TOLERANCE	-
	-	SPEED	-
		✓	POSE, EXPRESSION, & APPAREL TOLERANCE
Performance	✓	USER CONVENIENCE	
	✓	SPOOF-RESISTANCE	
	✓	DEMOGRAPHIC-BIAS FREE	
	✓	ACCURACY	
	✓	SCALABILITY	
	✓	PRIVACY	

Princeton Identity is a leading innovator of iris-biometric and multi-factor authentication technologies, transforming how businesses and governments around the globe achieve secure and reliable identity assurance. Backed by over two decades of research and product design, our solutions are trusted by some of the most recognized names in banking, industry, higher education, healthcare, transit, and border control. Princeton Identity systems are proudly manufactured in the USA, and deliver unparalleled flexibility, accuracy, convenience, and scalability.



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