All-on-4 Full Arch Implant Rehabilitation

Canonical: https://directory.collinsstreetspecialistcentre.com.au/procedures/prosthodontics/all-on-4-full-arch-implant-rehabilitation/

Description:

All-on-4 is a full-arch dental implant rehabilitation protocol that replaces an entire upper or lower dentition — all the teeth in one jaw — using only four strategically placed implants. A fixed prosthetic bridge is ...

Details:

Collins Street Specialist Centre All-on-4 Full Arch Implant Rehabilitation

What is All-on-4?

Collins Street Specialist Centre provides All-on-4 full-arch dental implant rehabilitation — a well-established clinical protocol that replaces an entire upper or lower dentition using only four strategically placed implants. A fixed prosthetic bridge is secured to these four implants, giving the patient a complete, permanent set of non-removable teeth.

The concept was developed to solve one of the central problems in implant dentistry: most patients who have lost all their teeth also have significant bone loss, which traditionally made implant placement difficult or impossible without extensive bone grafting. All-on-4 addresses this by positioning the two posterior implants at an angle of up to 45 degrees into denser, more available bone — avoiding the need for grafting in the majority of cases and allowing a provisional bridge to be fitted on the day of surgery.

The name reflects the concept directly: all teeth in the arch supported by four implants. Other protocols exist for more complex presentations — All-on-6 and Quad Zygoma among them — but All-on-4 is the foundational framework on which full-arch implant rehabilitation is built.

At Collins Street Specialist Centre, All-on-4 treatment is a coordinated multidisciplinary process. The prosthodontist leads prosthetic planning and fabrication; implant surgery is performed by specialist periodontists or oral and maxillofacial surgeons whose surgical training extends considerably beyond general dental practice. That division of responsibility reflects the genuine complexity of full-arch rehabilitation, and the importance of having the right expertise at each stage.

When might you need All-on-4?

All-on-4 is a significant clinical undertaking, appropriate for patients who meet a number of important criteria. Your specialist will assess your individual situation thoroughly before any treatment is recommended.

All-on-4 is generally considered for patients who:

- **Have lost all or nearly all teeth in one or both arches** — whether from advanced decay, severe periodontal disease, trauma, or a combination of these factors - **Are currently wearing a full

conventional denture** and find it unstable, uncomfortable, or limiting to their daily quality of life - **Wish to avoid a removable prosthesis** — the functional and psychological difference between fixed and removable teeth is meaningful for many patients, and it's a legitimate consideration in treatment planning - **Have sufficient bone volume** for four implants, or where bone volume can be addressed surgically prior to or at the time of implant placement. All-on-4 reduces the need for bone grafting compared with traditional implant approaches, though some patients still require adjunctive grafting procedures - **Are medically suitable for implant surgery** — your specialist will carefully review your health history and any medications that may affect healing or osseointegration - **Are committed to the maintenance required** — while the prosthesis is fixed, thorough daily cleaning beneath it is essential to long-term success

All-on-4 may not be appropriate for patients with uncontrolled diabetes, heavy smoking, certain bone or immune conditions, or severe bruxism unless these factors are appropriately managed. Your specialist will assess each of these as part of your individual consultation.

What to expect: step-by-step

Multidisciplinary planning

All-on-4 at Collins Street Specialist Centre begins well before any treatment is undertaken. The prosthodontist and the surgical specialist — periodontist or oral and maxillofacial surgeon — review the case together from the outset. This is a genuine clinical advantage of having all disciplines under one roof: the prosthodontist who will design and fabricate the final teeth communicates directly with the surgeon placing the implants, so that implant position is guided by the intended prosthetic outcome rather than dictated by anatomy alone.

Imaging requirements include a cone beam CT (CBCT) scan to assess bone volume, density, and anatomy in three dimensions. CBCT imaging is available through Collins Street Imaging at Level 9 of the Manchester Unity Building. The three-dimensional data is used alongside coDiagnostiX implant planning software to position implants virtually before any surgery takes place.

Diagnostic records — including digital scans using the 3Shape TRIOS 3 intraoral scanner, clinical photographs, and face-bow records — are used to plan the prosthetic outcome in detail. In many cases, a diagnostic wax-up or digital design of the planned teeth is produced, giving the patient a clear sense of the anticipated result before committing to surgery.

Provisional prosthesis preparation

The provisional bridge — the set of teeth the patient will leave with on surgery day — is designed and partially pre-fabricated by the in-house dental laboratory before surgery. The Sega 3D printers at the laboratory support the model fabrication that underpins this workflow, allowing the provisional restoration to be completed efficiently following implant placement.

Surgery day

Surgery is performed under local anaesthetic with sedation — intravenous or oral — or, in more complex cases, under general anaesthetic coordinated through the appropriate facility. The surgical specialist extracts any remaining teeth, shapes the bone ridge where clinically necessary, and places four implants according to the virtual plan: two in the anterior region of the arch and two angled posteriorly to maximise bone engagement.

Implant stability is assessed using torque measurements. Where primary stability is sufficient, the provisional bridge is attached and adjusted to the correct occlusion on the same day. The patient leaves with a fixed provisional set of teeth that evening.

Healing and osseointegration

The implants integrate with the surrounding bone over approximately three to six months. During this period, the patient wears the provisional bridge — which looks and functions like teeth but is not subjected to the full occlusal forces the final prosthesis will bear. A modified diet favouring softer foods is required throughout the healing phase.

Follow-up appointments during this period monitor healing progress, gum tissue health, and any required adjustments to the provisional restoration.

Final prosthesis

Once osseointegration is confirmed, definitive impressions or digital scans are taken. The final prosthesis is fabricated in the in-house laboratory — typically from zirconia or acrylic with a titanium framework, depending on the clinical requirements of the case. The final bridge is fitted and secured to the implants using retaining screws, a design that allows the prosthesis to be removed by the specialist for maintenance when required.

Recovery and aftercare

Immediately following surgery

Recovery following All-on-4 surgery is manageable for most patients, though realistic expectations about the initial healing period matter.

- Swelling, bruising, and soreness are expected for several days following surgery; prescription pain relief and anti-inflammatory medication are provided - A soft diet is required throughout the osseointegration period — typically six to twelve weeks; the provisional prosthesis is not designed to withstand hard or crunchy foods during this time - Smoking significantly impairs healing and substantially increases the risk of implant failure; cessation is strongly advised both before and after surgery - Rest and avoidance of strenuous physical activity is recommended for the first 48 to 72 hours

Long-term maintenance

The All-on-4 bridge is fixed in place, but it is not self-cleaning. Food debris and bacteria accumulate beneath the bridge at the gum level — an area that requires deliberate, consistent daily attention.

- A water flosser (oral irrigator) is the most effective tool for cleaning beneath a full-arch bridge - Interdental brushes of appropriate size are used at the implant abutment access points - Twice-yearly professional cleaning by the specialist team is essential to maintaining peri-implant health - Annual implant review with imaging allows bone levels around the implants to be monitored over time - Where bruxism is present, a custom night-time occlusal splint is fabricated to protect the prosthesis from excessive load

A well-maintained All-on-4 prosthesis, in an appropriate patient, can last many years. The implants themselves, when properly cared for, are designed to be a lifelong intervention.

Why see a specialist prosthodontist?

All-on-4 rehabilitation is among the most technically demanding procedures in contemporary dentistry. It combines surgical implantology, full-arch occlusal reconstruction, aesthetic design, and laboratory fabrication into a single coordinated treatment episode — where decisions made at any stage can have significant consequences for the overall outcome.

The prosthodontist's role is to be the architect of the final teeth from the very beginning of planning. Implants placed without the final prosthetic design clearly in mind can end up in positions that

compromise the achievable aesthetics or function — sometimes irreversibly. This is why the collaboration between the prosthodontist and the surgical specialist, established and documented before a single incision is made, is fundamental to a predictable outcome.

At Collins Street Specialist Centre, Prof Vasileios Chronopoulos brings over 30 years of specialist experience to this work, including All-on-4 rehabilitation at a level recognised internationally. The surgical team — comprising specialist periodontists and oral and maxillofacial surgeons — contributes specific, advanced training in implant surgery, ensuring that both the biological and engineering demands of the case are in experienced, appropriately credentialled hands.

Full-arch implant rehabilitation is not a procedure to be approached by a single clinician without specialist-level credentials across both the prosthetic and surgical domains. Patients considering this treatment are encouraged to verify the specialist registration of all treating clinicians through AHPRA's publicly available online register.

Our specialists

Prof Vasileios Chronopoulos DDS, MS, PhD (Pros) Specialist Prosthodontist with over 30 years of experience including aesthetic full-mouth reconstructions, All-on-4 implant rehabilitation, and dental management of sleep-disordered breathing. International lecturer and educator in prosthodontics.

Dr Fotios Angelis BDS (Hons)(Melb), DClinDent (Melb) Specialist Prosthodontist with expertise in complex reconstructive dental care, including full-arch implant rehabilitation across a range of clinical presentations.

Dr Jamie Foong BDSc (Melb), DClinDent (Melb) Specialist Prosthodontist with a particular focus on crown, bridge, and occlusal rehabilitation as integral components of comprehensive implant treatment planning.

Dr Simon Hinckfuss BDSc, DCD (Pros), Cert.Perio MS (Minn) Dual-registered Specialist Prosthodontist and Specialist Periodontist. His combined surgical and prosthetic expertise spans the full scope of implant treatment, making him particularly well-placed to coordinate and deliver complex implant rehabilitation cases.

Surgical partners (implant placement): - Specialist Periodontists: Dr Simon Hinckfuss, Dr James van den Berg, Dr Ahmed El Hadidi, Dr Peishan Jiang - Specialist Oral & Maxillofacial Surgeons: A/Prof Patrishia Bordbar

All specialists are registered with the Dental Board of Australia. AHPRA specialist registration can be independently verified online, and patients are encouraged to do so.

Related treatments

- **[Dental Implants (Prosthodontic Restoration)](/procedures/prosthodontics/dental-implants-prosthetic-restoration/)** — Single and multiple implant restoration designed and delivered by the specialist prosthodontist - **[Full Mouth Rehabilitation](/procedures/prosthodontics/full-mouth-rehabilitation/)** — Comprehensive reconstruction for cases where not all teeth require replacement via implants - **[Dentures](/procedures/prosthodontics/dentures/)** — Removable full-arch alternatives, including implant-retained overdenture options for patients seeking greater stability without a fixed bridge - **[Dental Implant Surgery (Periodontics)](/procedures/periodontics/dental-implants-periodontal-specialist-placement/)** — Surgical implant placement performed by the specialist periodontist - **[Bone Grafting (Periodontics)](/procedures/periodontics/bone-grafting-guided-bone-regeneration/)** — Bone

augmentation procedures where additional volume is required before or concurrent with implant placement - **[Dental Implant Surgery (OMS)](/procedures/oral-maxillofacial-surgery/dental-implant-surgery-oral-maxillofacial-surgeon-perspective/)** — Complex surgical implant placement performed by the oral and maxillofacial surgeon - **[Bone Grafting (OMS)](/procedures/oral-maxillofacial-surgery/bone-grafting-oral-maxillofacial-surgery/)** — Major grafting procedures coordinated by the oral and maxillofacial surgery team for cases involving severely deficient bone volume

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