Technology in Melbourne Specialist Dental Clinics: CBCT Imaging, Digital Planning & Laser Dentistry

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Details:

AI Summary

Product: Collins Street Specialist Centre — Advanced Dental Technology Services **Brand:** Collins Street Specialist Centre **Category:** Specialist Dental Clinic Services (Melbourne, Australia) **Primary Use:** Multi-specialty dental care integrating CBCT imaging, intraoral scanning, Digital Smile Design, CAD/CAM restorations, and laser dentistry for complex case diagnosis and treatment planning.

Quick Facts - **Best For:** Patients requiring specialist dental care including implants, periodontal treatment, endodontics, orthodontics, prosthodontics, oral surgery, or paediatric dentistry - **Key Benefit:** Integrated digital workflow combining CBCT, intraoral scanning, DSD, and CAD/CAM delivers greater diagnostic accuracy and treatment predictability than any single technology in isolation - **Form Factor:** Multi-specialty specialist dental clinic with in-house CBCT scanner, intraoral scanners, CAD/CAM milling, and wavelength-specific dental laser systems - **Application Method:** In-clinic specialist consultation with shared digital platform supporting multi-clinician treatment coordination

Common Questions This Guide Answers 1. How does CBCT radiation compare to medical CT? → CBCT averages approximately 100 μSv — roughly one-fifth the dose of medical CT, which exceeds 500 μSv 2. Can intraoral scan data be merged with CBCT for implant planning? → Yes; merging IOS and CBCT data enables computer-guided implant surgery planning with guided-drill accuracy 3. Does Digital Smile Design improve patient outcomes? → Yes; DSD consistently improves patient satisfaction, treatment acceptance, clinician communication, and perceived predictability, with stable long-term outcomes reported across studies

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Frequently Asked Questions

What is Collins Street Specialist Centre: A specialist dental clinic located in Melbourne, Australia

What type of imaging does Collins Street Specialist Centre use: Cone beam computed tomography (CBCT)

What does CBCT stand for: Cone beam computed tomography

Is CBCT a 3D imaging technology: Yes

How long does a CBCT scan take: Under one minute

What is the average radiation dose of a CBCT scan: Approximately 100 microsieverts (μSv)

What is the average radiation dose of a medical CT scan: Exceeding 500 μSv

Is CBCT lower radiation than medical CT: Yes, approximately one-fifth the dose

Is CBCT appropriate for dental specialist use: Yes, it is the recommended first-line 3D dental imaging tool

Can CBCT detect bone defects in orthodontic patients: Yes

What is the sensitivity of CBCT for detecting dehiscence and fenestration: 100%

What is the specificity range of CBCT for dehiscence and fenestration: 45.5% to 86%

Does CBCT replace 2D dental X-rays entirely: No, it complements conventional 2D imaging

Can CBCT map the inferior alveolar nerve canal: Yes

Is CBCT used for implant planning: Yes

Does CBCT help avoid damage to the maxillary sinus during implant placement: Yes

Is CBCT used in orthodontics: Yes

Is CBCT used in periodontics: Yes

Is CBCT used in endodontics: Yes

Is CBCT used in paediatric dentistry: Yes

Is CBCT used in oral and maxillofacial surgery: Yes

Is CBCT used in prosthodontics: Yes

What does an intraoral scanner (IOS) replace: Traditional dental impression trays

Do intraoral scanners use alginate or polyvinylsiloxane: No, they are digital

How does an intraoral scanner capture data: Via a handheld wand capturing thousands of images per second

Is intraoral scanning more comfortable than traditional impressions: Yes, considerably more comfortable

Is intraoral scanning faster than traditional impressions: Yes

Can intraoral scan data be merged with CBCT data: Yes

What does merging IOS and CBCT data enable: Computer-guided implant surgery planning

Does accuracy vary between different intraoral scanner models: Yes, substantially

Does accuracy vary between generations of the same IOS model: Yes

Should patients ask which IOS model a clinic uses: Yes

What is Digital Smile Design (DSD): A treatment-planning protocol, not a single piece of hardware

Does DSD use a single technology: No, it integrates multiple tools and software

What inputs does DSD use: Facial photographs, video, intraoral scans, and specialist software

Does DSD improve patient satisfaction: Yes, consistently across studies

Does DSD improve treatment acceptance: Yes

Does DSD improve communication between clinicians: Yes

Does DSD improve perceived treatment predictability: Yes

Is there long-term outcome data supporting DSD: Yes, studies report stable long-term outcomes

Does DSD improve patient self-confidence: Yes, reported in follow-up studies

What does CAD/CAM stand for: Computer-aided design and computer-aided manufacturing

Can CAD/CAM produce a crown in a single appointment: Yes

What are the three stages of chairside CAD/CAM: Digital impression, virtual design, and automated milling

What material is preferred for CAD/CAM single-tooth restorations: Lithium disilicate ceramic

Is lithium disilicate suitable for anterior teeth: Yes

Is lithium disilicate suitable for posterior teeth: Yes

What brand of lithium disilicate is commonly referenced: IPS e.max

Is marginal fit clinically significant for restorations: Yes

Can a poor marginal fit cause periodontal disease: Yes

Can a poor marginal fit cause secondary caries: Yes

Can restorations be milled in-house or sent to a laboratory: Either option is possible

Does in-house milling enable same-day restorations: Yes

Does laboratory milling offer a broader material range: Yes

Are dental lasers a single technology: No, they are a family of wavelength-specific instruments

What wavelength is a diode laser: 800–980 nm

What is a diode laser used for: Soft-tissue procedures and photobiomodulation

What wavelength is an Nd:YAG laser: 1,064 nm

What is an Nd:YAG laser used for: Deep periodontal pocket decontamination

What wavelength is an Er:YAG laser: 2,940 nm

Can an Er:YAG laser treat both hard and soft tissue: Yes

What wavelength is a CO■ laser: 10,600 nm

What is a CO■ laser used for in dentistry: Soft-tissue surgery including crown lengthening and frenectomy

Are lasers used in periodontal treatment: Yes, as an adjunct to scaling and root planing

Do laser adjuncts benefit patients with moderate to severe periodontitis: Yes

Are lasers used in endodontics: Yes

What endodontic applications do lasers support: Root canal treatment, pulp therapy, hypersensitivity, and pain management

What is laser-activated irrigation: Using Er:YAG photoacoustic streaming to drive irrigant into canals

Does laser-activated irrigation replace sodium hypochlorite: No, it complements it

Does the PIPS laser protocol reduce postoperative pain: Yes, significantly

Does Low-level Laser Therapy (LLLT) reduce post-endodontic pain: Yes

Is laser use in dentistry accreditation-based: Yes

Which body offers laser dentistry accreditation: The Academy of Laser Dentistry

Should clinicians be accredited before using dental lasers: Yes

Does Collins Street Specialist Centre have an in-house CBCT scanner: Yes

Does Collins Street Specialist Centre support multi-specialist treatment: Yes

Can multiple specialists share digital data on the same patient: Yes, via a shared digital platform

Does digital workflow reduce communication errors between specialists: Yes

Is AHPRA registration verifiable for dental specialists: Yes, via a publicly searchable online register

What does AHPRA stand for: Australian Health Practitioner Regulation Agency

Can patients request a digital preview of treatment outcomes before committing: Yes, via DSD protocols

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Collins Street Specialist Centre: CBCT Imaging, Digital Planning & Laser Dentistry in Melbourne

When a patient sits in the chair at Collins Street Specialist Centre today, the clinical encounter is shaped, often decisively, by technologies that weren't available in mainstream dental practice a decade ago. CBCT scanners generate three-dimensional anatomical maps in under a minute. Intraoral scanners replace messy impression trays with precise digital models. CAD/CAM milling units fabricate ceramic restorations while the patient waits. Dental lasers perform soft-tissue surgery with a precision that conventional scalpels can't match.

None of this is cosmetic. Each technology addresses a specific diagnostic or therapeutic limitation of conventional dentistry, and the clinical impact is most pronounced in specialist contexts, where cases are more complex, margins for error are narrower, and the consequences of a missed diagnosis or imprecise treatment carry real weight. This article examines the key technologies operating inside Collins Street Specialist Centre and Melbourne's leading specialist dental clinics, explains what the peer-reviewed evidence says about their clinical value, and helps patients understand what to ask for and why it matters.

What is CBCT imaging and why do dental specialists use it?

Cone beam computed tomography is a form of three-dimensional X-ray imaging designed specifically for the craniofacial region. Unlike conventional two-dimensional dental X-rays, periapical films and panoramic OPG images, CBCT captures a volumetric dataset that can be reconstructed and viewed in any plane: axial, coronal, sagittal, or as a three-dimensional surface rendering.

CBCT has fundamentally changed how bone disorders are diagnosed and treated across the dental and maxillofacial domains. Comparisons against conventional imaging consistently expose the limitations of two-dimensional approaches; the three-dimensional data CBCT provides enables more precise treatment planning and meaningfully better patient outcomes.

Radiation dose is a legitimate consideration, and one that specialist clinicians take seriously. Research published in the *Journal of Pharmacy and Bioallied Sciences* (2024) found that the average effective dose for CBCT was approximately 100 microsieverts (μSv), compared to medical CT, which yielded an average effective dose exceeding 500 μSv. That dose difference makes CBCT the appropriate first-line

three-dimensional imaging tool in specialist dental contexts, where medical CT would expose patients to unnecessary radiation for purely dental indications.

CBCT applications across the six dental specialties

CBCT improves diagnostic accuracy across periodontics, orthodontics, endodontics, and dental implantology. Its applications span every recognised dental specialty:

Specialty	Primary CBCT application
Orthodontics	Airway analysis, impacted canine localisation, root torque planning, skeletal assessment
Periodontics	Buccal bone loss quantification, furcation defect mapping, bone grafting site assessment
Endodontics	Canal morphology, missed canals, root fracture detection, periapical lesion extent
Prosthodontics	Implant site bone volume, ridge anatomy, sinus floor mapping
Oral & Maxillofacial Surgery	Impacted wisdom teeth, jaw surgery planning, pathology extent, TMJ assessment
Paediatric Dentistry	Supernumerary teeth, eruption pathway, trauma assessment

In orthodontics, CBCT's capacity to detect bone defects around teeth before treatment begins carries particular clinical importance. Research published in *Cureus* (2022) found that CBCT's sensitivity for detecting dehiscence and fenestration in orthodontic patients was 100%, with specificity ranging from 45.5% to 86%. This matters because moving teeth through compromised bone without foreknowledge carries a real risk of root and bone damage — a risk that CBCT allows the specialist to mitigate through modified treatment planning.

For implant planning, CBCT lets the specialist measure available bone volume, map the inferior alveolar nerve canal, and design a surgical guide before a single incision is made. CBCT scans effectively visualise critical soft tissue structures such as the mandibular canal, offering real advantages for accurate implant placement and helping to avoid damage to neurovascular bundles and the maxillary sinus. (See our guide on *Dental Implants in Melbourne: When You Need a Specialist and What the Full Treatment Journey Involves* for a detailed walkthrough of how CBCT integrates into the implant workflow.)

Intraoral scanners: replacing impressions with digital precision

Traditional dental impressions — trays filled with alginate or polyvinylsiloxane that patients must hold in their mouths for several minutes — have been a fixture of dentistry for over a century. Intraoral scanners (IOS) replace this process with a handheld wand that captures thousands of images per second and assembles them into an accurate three-dimensional digital model in real time.

Intraoral scanners were initially adopted to create three-dimensional digital dental models, but have since attracted attention as a diagnostic tool in their own right. In specialist practice at Collins Street Specialist Centre, their value extends well beyond patient comfort. Digital intraoral scanning, combined with cephalometric analysis and CAD/CAM technologies, allows virtual treatment simulations to visualise outcomes, while the scanning process itself is faster and considerably more comfortable than traditional impressions.

IOS data combined with facial scans enables digital smile design, while IOS scans merged with CBCT data support both static and dynamic navigation methods. This integration, where an intraoral scan is overlaid onto a CBCT dataset, is now the foundation of computer-guided implant surgery in Melbourne specialist clinics. It allows the prosthodontist and surgeon to plan the final tooth position before surgery begins, then execute that plan with guided-drill accuracy.

One thing worth knowing: accuracy varies substantially between different IOS technologies, and between different generations of the same scanner. Patients choosing a specialist clinic are encouraged to ask which model is in use. Current-generation devices represent a significant accuracy improvement over earlier ones, and that distinction has real clinical consequences for the precision of

restorations and surgical guides produced from the data.

Digital Smile Design: visualising outcomes before treatment begins

Digital Smile Design (DSD) is a treatment-planning protocol, not a single piece of hardware. It integrates facial photographs, video, intraoral scans, and specialist software to create a preview of the proposed aesthetic and functional outcome before any irreversible treatment is undertaken.

DSD provides rehabilitative aesthetic planning from a facial perspective, supports clearer communication between clinicians, and improves expected treatment outcomes. It's used for more consistent treatment planning across complex cases, and for patients facing significant restorative work, the ability to see a realistic preview before committing to treatment is genuinely useful.

The patient-centred evidence is compelling. Across all studies included in a 2025 systematic review published in *Cureus*, DSD consistently improved patient satisfaction, treatment acceptance, communication, and perceived predictability compared with conventional approaches. Quantitative evidence showed significantly higher satisfaction scores and superior aesthetic and functional ratings in DSD-guided treatments. Studies with follow-up data also reported stable long-term outcomes and improved self-confidence among patients.

For prosthodontists at Collins Street Specialist Centre managing complex full-mouth rehabilitation cases — patients with severe tooth wear, multiple missing teeth, or significant aesthetic concerns — DSD provides a structured framework for communicating the proposed outcome to the patient and coordinating with oral surgeons, periodontists, and ceramicists. By systematically analysing facial and dental characteristics, DSD enables comprehensive, personalised, and predictable outcomes in aesthetic dentistry. (See our guide on *Prosthodontists in Melbourne: Crowns, Implants, Bridges, Veneers & Full-Mouth Rehabilitation* for more on how DSD fits within multidisciplinary planning.)

CAD/CAM same-day restorations: what chairside milling means for patients

Computer-aided design and computer-aided manufacturing (CAD/CAM) technology allows a specialist clinic to design and mill a ceramic restoration — crown, inlay, onlay, or veneer — within a single appointment. The workflow has three stages: digital impression via intraoral scanner, virtual design of the restoration on screen, and automated milling from a ceramic block.

CAD/CAM has changed dental restoration practice in practical terms, improving precision, efficiency, and the degree to which restorations can be customised to individual anatomy. In specialist prosthodontic practice at Collins Street Specialist Centre, same-day fabrication has particular relevance for patients who have travelled significant distances or who can't readily manage multiple appointments.

CAD/CAM produces high-quality dental restorations with reproducible accuracy, in contrast to traditional manual manufacture, which introduces subjective errors at multiple stages of the process. The marginal fit of a restoration — how precisely it seals at the tooth margin — is a critical quality metric. A poor marginal fit can contribute to periodontal disease, secondary caries, bone loss, or restoration failure, so the accuracy of the milling process is clinically significant, not merely technical.

Material choice matters too. Clinical outcomes between CAD/CAM and conventional restoration groups have shown broadly comparable results, with lithium disilicate (LD) showing performance advantages in some analyses. Lithium disilicate ceramics, such as IPS e.max, are the material of choice for most single-tooth restorations in specialist clinics because of their translucency, strength, and adhesive bonding characteristics, making them well suited to both anterior and posterior applications.

Laser dentistry in specialist practice: periodontics, endodontics and beyond

Dental lasers are not a single technology. They're a family of wavelength-specific instruments, each optimised for different tissue interactions. The lasers most commonly used in Melbourne specialist clinics include:

- **Diode lasers (800–980 nm):** soft-tissue procedures, sulcular debridement, photobiomodulation (PBM) - **Nd:YAG lasers (1,064 nm):** deep periodontal pocket decontamination - **Er:YAG lasers (2,940 nm):** hard and soft tissue ablation, root surface debridement, caries removal - **CO■ lasers (10,600 nm):** soft-tissue surgery, crown lengthening, frenectomy

A 2024 narrative review of 67 articles published between 2018 and 2023 documented advances including photobiomodulation (PBM) for enhanced tissue healing and inflammation control, alongside applications in implantology, endodontics, and teeth whitening — reflecting the genuine clinical potential of lasers across specialist dental practice.

Laser-assisted periodontal treatment

In periodontics, lasers are used alongside conventional scaling and root planing (SRP) to decontaminate periodontal pockets, remove diseased epithelial lining, and stimulate tissue healing. A 2025 review assessed the efficacy and safety of laser therapy in periodontal treatment, examining clinical outcomes, patient experiences, and cost-effectiveness. The evidence supports laser adjuncts as clinically beneficial, particularly for patients with moderate to severe periodontitis who aren't ideal surgical candidates or who prefer minimally invasive approaches. (See our guide on *Periodontists in Melbourne: Gum Disease Treatment, Implant Surgery & Periodontal Procedures* for the full clinical context of periodontal treatment pathways.)

Laser applications in endodontics

The endodontic application of lasers is one of the most research-active areas in specialist dentistry. Because of their ablation, penetrability, and disinfection capabilities, lasers have demonstrated meaningful clinical utility across endodontic treatments, including root canal treatment, vital pulp therapy (pulp capping and pulpotomy), dentinal hypersensitivity treatment, and the management of dental pain related to pulp and periradicular disease.

A particularly important application is laser-activated irrigation, which uses the photoacoustic streaming effect of Er:YAG lasers to drive irrigant solutions deep into lateral canals and dentinal tubules that conventional needle irrigation can't reliably reach. Er:YAG lasers using the Photon-induced Photoacoustic Streaming (PIPS) protocol have been shown to significantly reduce postoperative pain, though they don't surpass sodium hypochlorite irrigation as a standalone disinfection strategy. That positions laser-activated irrigation in its correct clinical role: a complement to chemical disinfection, not a replacement for it.

For post-procedure pain management, studies incorporating Low-level Laser Therapy (LLLT) have consistently shown a significant reduction in post-endodontic pain, a practical benefit for specialist endodontic clinics in Melbourne where patients frequently present with acute pain and procedural anxiety. (See our guide on *Endodontists in Melbourne: Root Canal Treatment, Cracked Teeth & Dental Trauma Specialists* for a full explanation of what patients can expect during an endodontic appointment.)

How these technologies work together: the integrated digital workflow

The real clinical power of these technologies comes not from any single tool in isolation, but from their integration into a connected workflow. At Collins Street Specialist Centre, treating a patient requiring an implant-supported crown might involve the following sequence:

1. **CBCT scan** → assess bone volume, map anatomy, identify risk factors 2. **Intraoral scan** → capture digital model of remaining teeth and soft tissues 3. **Digital Smile Design** → plan final tooth position relative to face and occlusion 4. **Virtual implant planning** → overlay IOS and CBCT data; design surgical guide 5. **Computer-guided surgery** → place implant via three-dimensional-printed surgical stent 6. **CAD/CAM crown fabrication** → design and mill final restoration from ceramic 7. **Laser-assisted soft tissue management** → refine gingival contour around implant

Intraoral scanning, CBCT data acquisition, facial scanning, smile design, and CAD design have together changed specialist dental practice, with digital dentistry now the primary daily workflow in leading clinics. Over the past decade, these tools have improved workflow efficiency, enabled precise planning, and reduced treatment turnaround times for patients.

This integration matters most in complex, multi-specialist cases. When a periodontist, prosthodontist, and oral surgeon are treating the same patient — a scenario common at Collins Street Specialist Centre and other Melbourne multi-specialty centres — a shared digital platform means every clinician works from identical data. This reduces the communication errors that can occur when analogue records are transferred between practices, and supports a level of treatment coordination that's genuinely difficult to achieve without connected digital infrastructure. (See our guide on *Best Specialist Dental Clinics in Melbourne: Multi-Specialty Centres vs Single-Specialty Practices* for an analysis of how clinic structure affects technology integration.)

What patients should ask when choosing a technology-equipped specialist clinic

Not all specialist clinics in Melbourne operate at the same level of technological investment, and knowing what to look for helps patients make informed decisions. The following questions are worth raising before booking:

- **"Do you have an in-house CBCT scanner?"** In-house CBCT means faster diagnosis and planning without referral delays; it also indicates that the clinic regularly manages complex cases requiring three-dimensional imaging. - **"What intraoral scanner do you use, and is it a current-generation model?"** This directly affects the accuracy of digital models used for planning and restoration fabrication. - **"Are restorations milled in-house or sent to a laboratory?"** Chairside CAD/CAM enables same-day restorations; laboratory-milled restorations may offer a broader range of material choices. - **"What laser systems do you have, and are your clinicians accredited in their use?"** Laser use in dentistry requires specific training; accreditation through bodies such as the Academy of Laser Dentistry is a meaningful quality indicator. - **"Can I see a digital preview of my treatment outcome before committing?"** This tells you whether the clinic uses DSD protocols for aesthetic planning, and whether the treatment approach is genuinely patient-centred.

Patients are also encouraged to verify their treating specialist's registration with AHPRA (the Australian Health Practitioner Regulation Agency), which maintains a publicly searchable register of all registered dental specialists in Australia.

Key takeaways

- **CBCT imaging improves diagnostic accuracy in periodontics, orthodontics, endodontics, and dental implantology** at approximately one-fifth the radiation dose of medical CT, making it the appropriate three-dimensional imaging standard for specialist dental care. - **Intraoral scanners and digital smile design provide rehabilitative aesthetic planning from a facial perspective, better communication between clinicians, and improved expected treatment outcomes**, replacing analogue impressions with faster, more comfortable, and more accurate digital workflows. - **Digital Smile Design consistently improves patient satisfaction, treatment acceptance, communication, and perceived predictability**

compared with conventional approaches across multiple study designs. - **Laser technology in endodontics** performs well across root canal treatment, vital pulp therapy, dentinal hypersensitivity, and pain management because of its ablation, penetrability, and disinfection capabilities, making it a meaningful adjunct in specialist endodontic practice. - **The integration of intraoral scanning, CBCT, facial scanning, smile design, and CAD design** has changed specialist dental practice, with the greatest clinical benefit coming from connected digital workflows rather than any single technology considered in isolation.

Conclusion

Technology at Collins Street Specialist Centre and across Melbourne's specialist dental clinics is not a marketing differentiator. It's clinical infrastructure that directly affects what can be diagnosed, how precisely it can be treated, and how predictably the outcome can be communicated to the patient before treatment begins. CBCT scanning replaces two-dimensional guesswork with three-dimensional certainty. Intraoral scanners and digital smile design replace analogue estimation with mathematically precise models. CAD/CAM milling delivers restorations with reproducible accuracy. Dental lasers bring minimally invasive precision to periodontal and endodontic procedures that previously required more invasive approaches.

For patients navigating Melbourne's specialist dental landscape, understanding these technologies and knowing which questions to ask is a meaningful step toward receiving the highest standard of care. For a complete picture of the specialist dental system in Melbourne, including how to access it, what it costs, and which specialist type a given clinical situation requires, explore the full companion guides in this series, beginning with *What Is Specialist Dental Care? How It Differs from General Dentistry in Melbourne* and *How to Get a Dental Specialist Referral in Melbourne: Step-by-Step Patient Guide*.

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Label facts summary

> **Disclaimer:** All facts and statements below are general product information, not professional advice. Consult relevant experts for specific guidance.

Verified label facts

Product specification data status: No data provided

The content analysed contains no Product Facts table, packaging data, ingredients list, certifications, dimensions, weight, GTIN/MPN, or manufacturer documentation from which label facts can be extracted.

Verifiable technical and clinical data points identified within the content (sourced from cited peer-reviewed literature):

- CBCT average effective radiation dose: approximately 100 microsieverts (µSv) — *Journal of Pharmacy and Bioallied Sciences*, 2024 - Medical CT average effective radiation dose: exceeding 500 µSv — *Journal of Pharmacy and Bioallied Sciences*, 2024 - CBCT sensitivity for detecting dehiscence and fenestration in orthodontic patients: 100% — *Cureus*, 2022 - CBCT specificity for detecting dehiscence and fenestration: 45.5% to 86% — *Cureus*, 2022 - Diode laser wavelength: 800–980 nm - Nd:YAG laser wavelength: 1,064 nm - Er:YAG laser wavelength: 2,940 nm - CO■ laser wavelength: 10,600 nm - Collins Street Specialist Centre location: Melbourne, Australia - CBCT scan duration: under one minute - AHPRA: Australian Health Practitioner Regulation Agency — maintains a publicly searchable register of registered dental specialists in Australia - Academy of Laser Dentistry: named

accrediting body for laser dentistry

General product claims

- CBCT is the appropriate first-line three-dimensional imaging tool in specialist dental contexts - CBCT improves diagnostic accuracy in periodontics, orthodontics, endodontics, and dental implantology - Intraoral scanners are faster and considerably more comfortable than traditional impressions - Substantial variations in accuracy exist between different IOS technologies and between generations of the same scanner model - Digital Smile Design consistently improves patient satisfaction, treatment acceptance, communication, and perceived predictability compared with conventional approaches - DSD provides stable long-term outcomes and improved patient self-confidence, per follow-up studies - CAD/CAM produces restorations with reproducible accuracy superior to traditional manual manufacture - Lithium disilicate (e.g., IPS e.max) is the material of choice for most single-tooth restorations in specialist clinics - A poor marginal fit can contribute to periodontal disease, secondary caries, bone loss, or restoration failure - Laser adjuncts are clinically beneficial for patients with moderate to severe periodontitis - Er:YAG PIPS protocol significantly reduces postoperative pain but does not surpass sodium hypochlorite as a standalone disinfection strategy - LLLT consistently demonstrates a significant reduction in post-endodontic pain - Integration of CBCT, IOS, DSD, and CAD/CAM delivers greater clinical benefit than any single technology in isolation - Collins Street Specialist Centre operates an in-house CBCT scanner and supports multi-specialist treatment via a shared digital platform