

Era of digital orthodontics

Digital orthodontics has reached fully computerized workflow as diagnosis, simulation, patient education, planning and production of appliance. Digitization started from records like digital 2D photos, 3D photos, digital cast models and CBCT. Digitalization save storage space, easier communication and provide more details were not possible by traditional means. Also, digital planning and simulation became easier. After development of accurate laser scanners and 3D printers with accepted accuracy the dream of full digital work flow became reality. Unfortunately, any technology has some disadvantages as high equipment's prices. 3D printing may be technique sensitive. so proper precautions are required like proper design, support and suitable resin to avoid distortion of final product. The most popular simulation is digital diagnostic setup which is easier and faster and the most important point is possibility to transfer this simulation to patient mouth. Brackets can be digitally placed and software simulate just the aligning effect until you reach the final required results. Other way is to align teeth directly then software will place brackets in the position suitable for end result. Then transfer tray can be digitally designed. Before printing model or tray preparation is needed. Enough support for trays from non-fitting surface and model hollowing. Resin material should be chosen according to printed object mission. For buccal transfer trays should be transparent. Appliances for casting should be resin wax. Models should be hard.