The purpose of this retrospective study was to assess the survival rate of the SPIRAL implant (Alpha-Bio, Petach-Tikva, Israel) with its special novel design, in regular and complicated cases.

Materials and Methods
Consecutively placed SPIRAL implants in six centres were retrospectively follow-up according to a stated protocol. Patient history data and information from the performed treatment were computerized in a database. For failures, type and cause were registered. The novel SPIRAL implant design (Fig. 1) incorporates several features including: excellent primary stabilization (Fig. 2) self-condensing, self-tapping and self-drilling (Fig. 3). Other features allow placement in narrow osteotomies and controlled direction of the insertion path (Fig. 4).

A total of 648 implants were placed in 251 patients; 362 implants were placed in the maxilla and 286 implants in the mandible. Fifty-five percent of the implants were placed in the anterior and 45% in the posterior regions of the jaws (Fig. 5). Implant diameters of 3.75, 4.2 and 5.0 mm were used in 53.1, 30.1, and 16.7% of the sites, respectively and 1 implant of 6 mm width. The 13 mm long implant was the most frequently used with 274 implants followed by the 10 mm with 145 implants placed, 11.5 mm with 136 implants placed, 16 mm with 99 implants placed (Table 1). The surgical procedure included: delayed loading with a one-stage procedure and immediately and early loaded implants 36.4% (Fig. 6). Most of the restorations are cemented bridges 81.6% (Fig. 7). Both healed and extraction sites were included. Previous augmentation procedures had been performed for 23.5% of the implant sites. 24.1% of the sites were augmented at the time of implant placement. 12.5% more of the implants were inserted in augmented maxillary sinuses (Fig. 8). The current follow-up period range from 12 to 48 months (mean time 27.4 months) following implant insertion.

In Figures 2A-D the SPIRAL implant is made in a holo-dent and retained in only 1 mm of bone. The defect around the implant is filled with a synthetic bone augmenting material.

In Figures 3A-C self-drilling, self-tapping.

In Figures 4A-C demonstration immediate implantation using the capability of the SPIRAL implant to start the insertion in a first angle inside the palatal wall and afterwards to change the direction to the desired position and angle.

Results
Eleven implants (1.7%) have failed, 7 of them within the first month following placement. Cumulative survival rate is presented in Table 2.

Conclusion
This initial report demonstrates a survival rate of 98.3% after 4 years follow-up of the novel SPIRAL implant. This high survival rate, which is similar and higher than values reported in other studies, was achieved although 76.1% of the implants were inserted in very demanding situations like immediate implantation 33.8%, immediate and early loading (up to 14 days from implantation) 36.4%, implanting together with augmentation 24.1% and simultaneously with sinus lift procedures 11.7%.

References